



Opened ARMS

A good dataset is a treasure trove, capable of testing the most mundane and expected hypothesis (which can, instead, prove the unexpected) and testing complicated conjectures (which can uncover systematic relationships that untangle complex problems). Such is the character of data from the Agricultural Resource Management Survey (ARMS)—a broad information system obtained through an annual USDA survey and used by many inside and outside of USDA.

ARMS is the only national survey that provides observations of field-level farm practices, the economics of the farm business operating the field (or dairy herd, poultry house, etc.), and the characteristics of the household operating the farm—all collected in a representative sample.

Starting this September, when ARMS data collected for the year 2003 will be released, more people will have easier access to the dataset and the data will, for the first time, have statistical reliability at the State level (for 15 major agricultural States*) as well as at the national level. That means that States can assess, as ERS does for the Nation, such things as which characteristics elevate the top performing farms, how farm households divide their time among farm and nonfarm endeavors, what farm practices are gaining favor (and with what apparent returns to adopters), or exactly who needs financial or technical assistance. ARMS data are summarized to inform policy and program decisions at the State and national levels, as well as for agricultural businesses.

Thanks to new software and data management procedures, researchers in cooperative relationships with ERS will have desktop access to customized data summaries. These enhancements will make analyzing natural resource, technology adoption, farm business, and farm household issues less costly and more efficient. The same innovations will permit National Agricultural Statistical Service (NASS) State offices to produce customized data summaries for their customers.

Data are valuable only to the extent that they can be put to practical use, and are quickly available in the appropriate form and format, upon demand. Improvements in data access coming this fall will make ARMS data tremendously more valuable, while maintaining the strong disclosure and data security features that protect survey respondents.



Katherine Smith
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Economic Research Service

* Arkansas, California, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Carolina, Texas, Washington, and Wisconsin.

Interested in exploring ARMS data? Visit www.ers.usda.gov/briefing/arms/ for background, description, and currently available data summaries. To stay informed of new data availability and access options, subscribe to the ARMS Update newsletter at www.ers.usda.gov/updates/.

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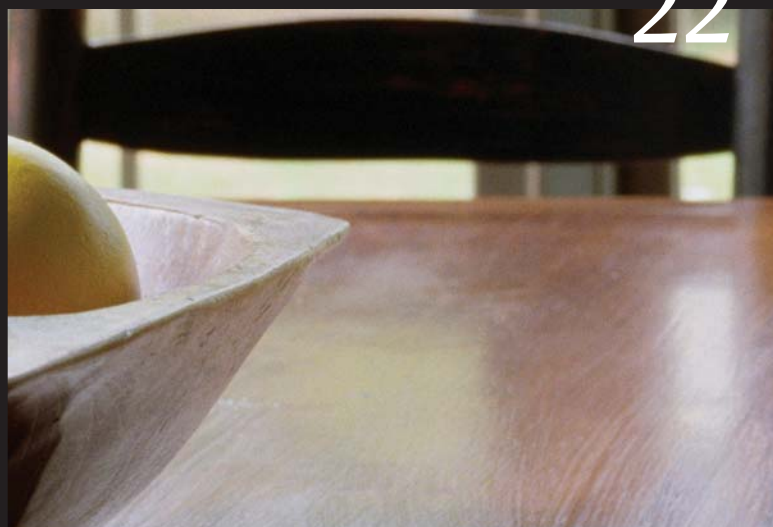


The population of the Asia-Pacific region is rapidly becoming more urban, increasing in number, and getting older. Over the next 20 years, these three demographic trends will generate powerful economic forces that will challenge the region's food system.

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Amber Waves **ONLINE**

www.ers.usda.gov/AmberWaves

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Global Trade in Fruits and Vegetables Brings Variety to the Nation's Grocery Stores

Ken Hammond, USDA

Twenty years ago, shoppers at U.S. grocery stores contented themselves with apples, pears, oranges, and bananas. More exotic fruit was sampled mainly on cruises and as garnishes to tropical drinks. Now mangoes, papayas, avocados, kiwi fruit, and more are available on produce shelves year round. This phenomenon is due to rapid growth in world fruit and vegetable trade. Many factors lie behind this growth, especially rapid advances in fruit handling and transport technology. Regional trade agreements and changing consumer preferences have also played a strong role. A trend toward trade liberalization and an extension of trading blocs facilitated trade, while rising

incomes have created a middle class that demands quality produce in all seasons and is willing to pay the price.

Improvements in transportation technology have reduced delivery time and shipping costs, so that perishable products can travel thousands of miles with no substantial loss in freshness and quality. The marketing reach of perishable products has been further extended by packaging innovations, new advances in refrigeration and atmosphere control, fruit and vegetable coatings, and other techniques that slow deterioration of food products. Satellite technologies, particularly global positioning systems, are becoming increasingly available

and less expensive.

These and other electronic technologies enable shippers to track their cargo around the world, monitor quality, reduce the risk (and costs) of liability claims, and shorten cargo delivery time.

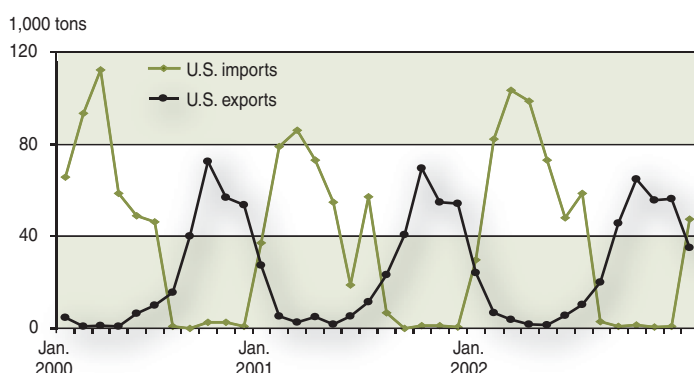
Globalization of trade in fruits and vegetables has provided consumers with more fruit and vegetable varieties year-round, overcoming seasonality and smoothing price fluctuations. Fresh grapes, for example, are now available year round, as California supplies of summer and fall grapes give way to grapes from Chile, Mexico, and elsewhere during the winter and spring. Partly as a result of this trade, U.S. per capita consumption of fresh grapes increased from less than 3 pounds in the early 1970s to more than 7 pounds over the last several years. Meanwhile, the United States ships most of its grape exports—mainly to its NAFTA neighbors (Canada and Mexico) and East Asian countries—from August to November. *W*

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This finding is drawn from . . .

Global Patterns of Trade in Fruits and Vegetables, by Sophia Wu Huang and David R. Kelch, WRS-04-06, USDA/ERS, May 2004, available at: www.ers.usda.gov/publications/WRS0406/

Consumers and producers of grapes both benefit from global trade



Untapped Potential of Cuba's Citrus and Tropical Fruit Industry



Thomas J. Manning

Cuba dominates the Caribbean in terms of land area, population, and agricultural production. The ongoing U.S. embargo now prevents Cuba from having much impact on intra-American trade. If the embargo were lifted, however, U.S. exports to Cuba could rival or exceed those to the rest of the Caribbean. Cuban exports to the United States could compete with U.S. producers, particularly in Florida, for some fruit and

vegetable products. Reopening of U.S.-Cuban trade could provide markets and foreign exchange to spur Cuban economic growth to significantly higher levels.

Cuba began to restructure its economy in the early 1990s in response to the economic crisis that followed the elimination of subsidies from the former Soviet Union. The crisis forced Cuba to move toward a more open economy and more market-oriented trade. The Government broke up many large state farms, provided farmer incentives to increase production, and allowed farmers markets where after-quota production can be sold at free-market prices. If its economy continues to restructure, Cuba could become an increasingly important agricultural importer and exporter.

Cuba has an ideal climate and land resources for citrus and tropical fruit production. Fruit production has been growing since the 1950s,

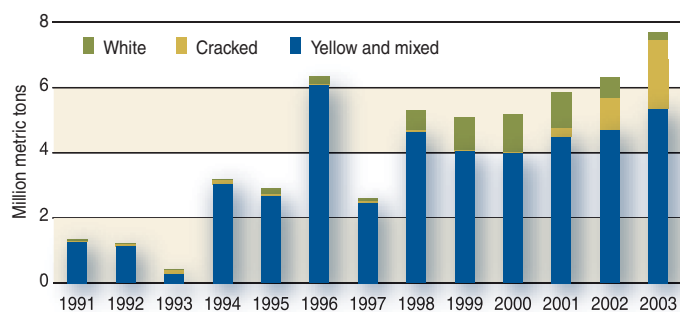
Mexico's Corn Industries and U.S.-Mexico Corn Trade

U.S. corn exports to Mexico have increased dramatically since the implementation of the North American Free Trade Agreement (NAFTA) in January 1994. Most of the increased trade has been in yellow corn, used primarily to feed livestock. But over the past 3 years, about 10 percent of this trade has consisted of white corn, which is used to produce tortillas and other traditional Mexican foods.

There are two fairly distinct markets for corn in Mexico: yellow corn for livestock feed and other industrial uses, such as the production of starch and high-fructose corn syrup, and white corn for direct human consumption. Over the next decade, the growth of yellow corn exports is largely assured by the anticipated expansion of Mexican livestock production. Prospects for white corn exports are more difficult to predict, given the changing structure of Mexico's corn, milling, and tortilla industries.

The Mexican corn sector is mostly devoted to the production of white corn. It continues to feature a large number of very small production units, typically about 10 hectares (25 acres), marked by low mechanization and low yields. Corn production has remained fairly stable during the NAFTA period, in part due to Mexican agricultural supports.

U.S. corn exports to Mexico still consist primarily of yellow corn



Yellow and mixed corn exports are calculated by subtracting white corn exports from total corn exports. Cracked corn (broken or ground kernels) is defined as a distinct commodity from corn. Like yellow corn, it is primarily used as animal feed.

Sources: USDA, Foreign Agricultural Trade of the United States database (total corn and cracked corn exports) and USDA, Agricultural Marketing Service, *Grain and Feed Weekly Summary Statistics*, various issues (white corn exports)

Roughly 45,000 tortilla producers and 10,000 corn millers operate throughout Mexico. But 90 percent of corn flour production is concentrated in two of Mexico's largest food

companies, Gruma and Grupo Minsa. Gruma also produces tortillas and tortilla-manufacturing equipment and has subsidiaries in Central America, Europe, the United States, and Venezuela. Gruma's U.S. operations accounted for 47 percent of corporate sales in 2002.

Pressures for change come from both the supply and demand sides. Increased concentration of Mexico's corn milling and tortilla industries is likely to narrow the opportunities for small-scale producers to market their output. At the same time, a shift in Mexican diets toward greater meat consumption and away from traditional foods is likely to limit the growth of white corn demand.

Income growth will not only drive changes in food demand, but it will also leverage structural change in Mexican agriculture. Improved nonagricultural job opportunities will draw some producers out of farming while supplementing the incomes of other farm households. The extent to which economic growth boosts tax revenues also may influence the degree to which the Mexican Government supports its agricultural producers. For U.S. exporters, these factors will likely assure Mexico's position as an important and growing market for yellow corn, while export possibilities for additional white corn sales are more difficult to project. **W**

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This finding is drawn from . . .

U.S.-Mexico Corn Trade During the NAFTA Era: New Twists to an Old Story, by Steven Zahniser and William Coyle, FDS-04D-02, USDA/ERS, May 2004, available at: www.ers.usda.gov/publications/fds/may04/fds04d02/



William Coyle, USDA/ERS

spurred by demand from a rapidly growing population. Growth accelerated in the mid-1990s with new incentives arising from government-sponsored garden programs, the establishment of private, price-oriented agricultural markets, and the restructuring of state farms. According to the Food and Agriculture Organization of the United Nations, tropical fruit production expanded to 517,000 metric tons in 2002, more than double its level in 1990.

Urban gardens and larger more intensive gardens on the edges of cities and towns grow much of Cuba's tropical fruit. These gardens use little in the way of purchased chemicals, fertilizers, and other inputs and depend heavily on labor. Intensive intercropping with tropical fruit trees provides vegetables critical shade from the hot tropical sun.

Cuba's export prospects will likely hinge on access to nearby, high-income markets like Canada and the United States. If the U.S. embargo were lifted, Cuba's citrus industry would likely look for markets in the United States for fresh citrus, processed citrus products, and citrus

byproducts. In turn, Cuba's citrus industry could become a market for U.S. exports of technology, citrus rootstock and other inputs, and capital. U.S.-Cuban partnerships might develop to partially integrate citrus production, processing, and marketing for U.S. markets. Initially, Cuba might even look to U.S. sources for high-quality tropical fruits for Cuba's growing tourist market. Eventually, as Cuba's economy and tropical fruit sector recover, U.S. consumers could provide opportunities for an increasingly competitive Cuban tropical fruit sector. **W**

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This finding is drawn from . . .

Cuba's Citrus Industry: Growth and Change, by William E. Kost, available at: www.ers.usda.gov/publications/fts/APR04/fts30901/

Cuba's Tropical Fruit Industry, by William E. Kost, available at: www.ers.usda.gov/publications/fts/APR04/fts30902/

Low-Income Households Spend Less on Fruits and Vegetables

Americans' consumption of fruits and vegetables falls short of Food Guide Pyramid recommendations. But not for lack of choice (see "Global Trade in Fruits and Vegetables Brings Variety to the Nation's Grocery Stores" on page 4). Still, the Produce for Better Health Foundation found that only 38 percent of Americans consumed the recommended 3-5 daily servings of vegetables, while just 23 percent consumed the recommended 2-4 servings of fruit.

Other research has shown that low-income households (those households with incomes less than or equal to 130 percent of the poverty line) consume even less fruits and vegetables, prompting ERS researchers to compare the choices that low-income and high-income households make at the grocery store. Nineteen percent of low-income households (versus 10 percent of higher income households) bought no fruits and vegetables from grocery stores and other at-home sources over a 2-week survey period in 2000. This gap persisted over the entire expenditure distribution. For example, half of the low-income households had weekly fruit and vegetable purchases of \$2.50 or less per person, whereas half of higher income

households had per person expenditures of \$4 or less. This gap in the expenditure distributions includes significant differences in average fruit and vegetable expenditures—\$3.59 per person per week for low-income households versus \$5.02 for higher income households. These results held when purchases were broken out into just fresh or just processed fruits and vegetables.

The ERS study also examined how spending by low-income households would change if they received a marginal amount of additional income. That is, would small increases in their incomes be spent on additional fruits and vegetables, or on other food or nonfood items, such as meats, cereals, bakery products, or clothing? The ERS study found that small changes in income had a positive and statistically significant effect on fruit and vegetable spending by higher income households, but had no impact on spending by low-income households. Low-income households may perceive other goods as more essential to the household than fruits and vegetables, and would thus spend small increases in income on these items.

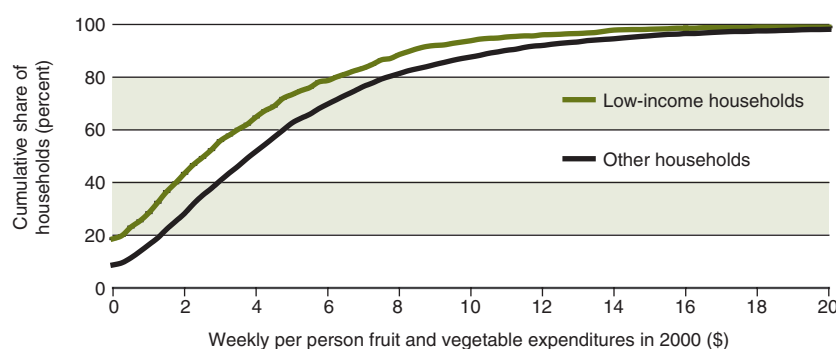
Interestingly, the largest positive influence on fruit and vegetable expenditures was having a college-educated head of household, regardless of income level. In fact, college-educated households had the highest level of per capita fruit and vegetable expenditures (\$5.99 per person per week). \mathbb{W}

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This finding is drawn from ...

Low-Income Households' Expenditures on Fruits and Vegetables, by Noel Blisard, Hayden Stewart, and Dean Jolliffe, AER-833, USDA/ERS, May 2004, available at: www.ers.usda.gov/publications/aer833/

Low-income households spend less on fruits and vegetables across the expenditure distribution



Technological Changes Contribute to Rise in Obesity

By any measure, more Americans are heavier today than ever before. Nearly 2 out of 3 adults now meet or exceed the clinical definition of overweight, and 3 out of 10 children are overweight or at risk for overweight. Especially alarming to public health experts is the rapid weight gain witnessed since the mid-1970s. Since then, obesity has doubled among adults and tripled among adolescent boys and girls.

People gain weight when energy consumption (or calories) from food consistently exceeds energy expended on bodily functions and physical activity. Therefore, the current obesity epidemic must be due to some combination of people eating more and moving less. "Environmental" changes in recent decades that have been linked to obesity include more fast foods, bigger portion sizes, and more sedentary lifestyles. Still, why are more people making the choices that lead to weight gain and obesity?

Economists are attempting to answer this by examining the incentives and disincentives people face when making food and physical activity choices. In earlier agricultural and industrial times, work was strenuous and people, in effect, were paid to exercise (that is, undertake work). Today, physical labor has become more rare and people pay to undertake—and budget time for—exercise. Inexpensive alternative uses for leisure time, such as TV or video games, only compound the problem.

Technological progress has also altered incentives for the type and amount of food people eat. A more efficient agricultural system has cut food prices, especially of calorie-dense foods. Advances in food processing and packaging have introduced a multitude of ready-to-eat foods, available virtually anywhere and at any time. This has reduced the time "cost" of food preparation and consumption. People have responded to these incentives by increasing the quantity and variety of foods they consume.

At the same time, technology-driven progress in medical and epidemiological research warns us of the serious health consequences of obesity. These warnings should act as a disincentive against choices that lead to excess body weight, but apparently have not. By studying how people evaluate long-term health consequences when making short-term food and activity choices, economists hope to better understand the causes behind the increase in obesity. *W*

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This finding is drawn from ...

The Economics of Obesity: A Report on the Workshop Held at USDA's Economic Research Service, by Tomas Philipson, Carolanne Dai, Lorens Helmchen, and Jayachandran N. Variyam, E-FAN-04-004, USDA/ERS, May 2004, available at: www.ers.usda.gov/publications/efan04004/

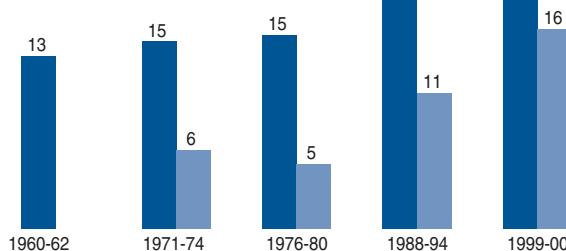


Corbis

Obesity has risen rapidly since the mid-1970s

Percent obese/overweight

■ Percent of adults who are obese
■ Percent of adolescents who are overweight



Note: Data not available for adolescents in 1960-62.

Sources: K.M. Flegal, M.D. Carroll, C.L. Ogden, and C.L. Johnson "Prevalence and Trends in Obesity Among US Adults, 1999-2000," and C.L. Ogden, K.M. Flegal, M.D. Carroll, and C.L. Johnson, "Prevalence and Trends in Overweight Among US Children and Adolescents, 1999-2000," both in the *Journal of the American Medical Association*, Vol. 288, No. 14, October 9, 2002.

Irrigation, Water Conservation, and Farm Size in the Western United States

Chad Swank, USDA/NRCS

Irrigation is critical to U.S. agriculture. While just 16 percent of all harvested cropland is irrigated, this acreage generates nearly half the value of all crops sold. Agriculture accounts for over 80 percent of water consumed in the U.S. Because of its large share of total consumption, agriculture is central to the challenge of balancing water demands among alternative uses, including increasing water demand for urban, industrial, and environmental uses.

Irrigation is particularly important for agriculture in the 17 Western States—even though only 30 percent of the harvested cropland on all farms in the West is irrigated. On irrigated farms in the region, irrigation is used on over 80 percent of harvested cropland. Irrigation systems are split evenly between gravity-based (such as flooding furrows or entire fields) and more efficient pressure systems (such as center-pivot sprinklers). Key to improving irrigation efficiency are Federal, State, and local cost-share programs that address farm water delivery systems (such as the lining of open-ditch systems)

and/or the adoption of more efficient technologies (such as low-pressure sprinkler systems). About 13 percent of irrigated farms in the West participated in public cost-share programs for irrigation or drainage conservation improvements between 1994 and 1998.

These cost-share programs could be more effective if more carefully targeted. Most irrigated farms are small (less than \$250,000 in annual farm sales), as are most farms that receive cost-share payments to improve irrigation efficiency. But larger farms are by far the heaviest users of irrigation water; the largest 10 percent of irrigated farms in the West account for half of total farm water applied. Cost-share programs that target larger farms would likely conserve more water, making more water available to meet environmental and other objectives, especially when integrated with water markets, water banks, and conserved-water-rights programs. Water banks and conserved-water-rights programs are relatively new State water management programs that either “bank” conserved agricultural water for future use, usually in a reservoir, or share conserved water among alternative water-use interests.

A new ERS database on irrigation systems and the characteristics of irrigated farms in the 17 Western States is a first step in understanding the impact of cost-share programs. It is based on data from USDA’s 1998 Farm and Ranch Irrigation Survey. **W**

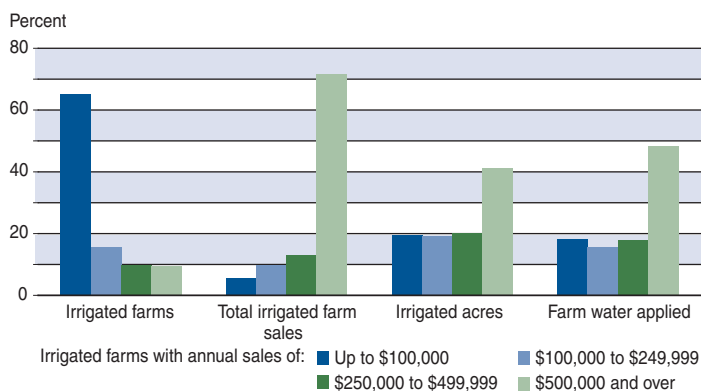
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This finding is drawn from . . .

Irrigation Data, available at: www.ers.usda.gov/data/westernirrigation/

For answers to questions on Western irrigation characteristics by farm size, see the Questions and Answers page, www.ers.usda.gov/briefing/wateruse/questions/qa.htm, of the Irrigation and Water Use Briefing Room, www.ers.usda.gov/briefing/wateruse/

While most irrigated farms in the West are small, the largest 10 percent (with more than \$500,000 in annual farm sales) use nearly half of all water used by farms



How Does Farmland Retirement Affect Rural Counties?

The Conservation Reserve Program (CRP) offers incentives for producers and landowners to voluntarily retire highly erodible and other environmentally sensitive cropland from production for 10-15 years. Retired land is planted to grasses, trees, and other cover, thereby reducing erosion and water pollution and nurturing wildlife. In exchange, producers receive annual rental payments and cost-share assistance. Approximately 34 million acres are currently enrolled in the CRP.

The program's benefits to the environment, CRP participants, and other crop farmers (through less output and higher prices) have made it a recurring focus of farm program legislation. However, the CRP's effect on farm communities has been a concern. Enrollment in CRP could weaken demand for farm inputs and agricultural marketing services, and many rural economies depend on such ancillary services,

especially in the Plains where the CRP is prevalent. (See "One in Five Rural Counties Depends on Farming," page 11.)

While anecdotal evidence suggests that the CRP has negatively affected some rural communities, recent ERS research indicates that, in the aggregate, impacts have been limited. High CRP enrollment did not have a statistically significant adverse effect on population trends in farm counties across the U.S. And while CRP enrollment was associated with some job loss in rural counties between 1986 and 1992 (the years immediately following the program's introduction), this negative relationship did not persist throughout the 1990s. Further, ERS research uncovered no statistically significant evidence that CRP participation encourages absentee ownership or that high levels of CRP participation affected local government services or tax burdens in a systematic way.

CRP participants can enroll either all (whole-farm) or part (partial-farm) of their eligible acreage, which has raised questions about how this choice affects the neighboring community. For both whole- and partial-farm participation, CRP was associated with slower job growth in the short term, but had no longer-term effect on the community. Whole- and partial-farm enrollment had different effects on the number of beginning farmers, who typically rent the land they farm. Whole-farm enrollments had negative impacts on the number of beginning farmers, while partial-farm enrollments had a positive impact. *W*

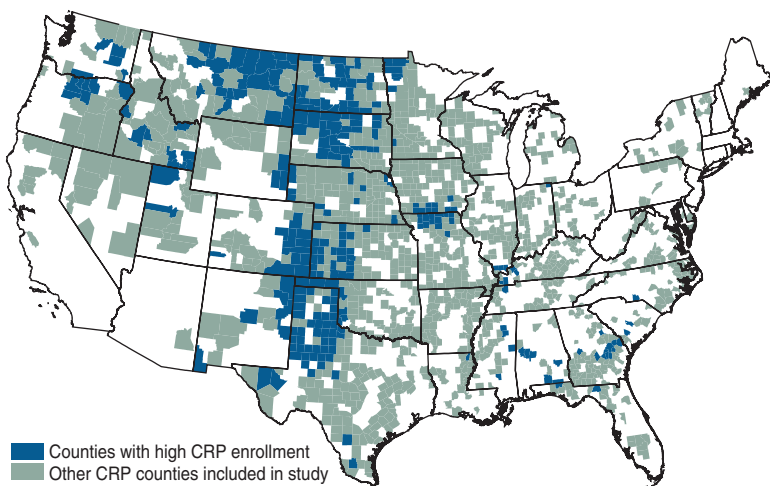
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This finding is drawn from . . .

ERS Briefing Room on Conservation and Environmental Policy,
www.ers.usda.gov/briefing/conservationandenvironment/

The Conservation Reserve Program is prevalent in the Plains States



Note: Map highlights the counties studied by ERS, in which farming accounts for at least 5 percent of employment.

Source: USDA's Farm Service Agency, CRP contracts file

Responding to Rural Job Loss: The Virginia Example

Plant closings in the textile and apparel industries have resulted in a loss of more than a third of all U.S. jobs in those industries since August 2000. Because these jobs are disproportionately located in nonmetro counties, the closings have had a major impact on rural areas. In response to large local job losses in rural communities, the Commonwealth of Virginia established Coordinated Economic Relief Centers (CERCs) in early 2002 to provide dislocated workers and other low-income residents access to a broad range of programs and services in one location.

Nonmetro counties of Southside Virginia, bordering North Carolina, were particularly hard hit by plant closings due to the concentration of textile, apparel, and furniture plants in the area. The Martinsville area, with a population of 93,000, lost 9,000 jobs over 1999-2002. Pillowtex, a towel-manufacturing plant in Henry County, announced that it was going out of business in 2003, thus eliminating an estimated 1,000 additional jobs in the area.

Operated by the Virginia Employment Commission and based on the Federal Emergency Management Agency's model of a single point of contact for natural disasters, CERCs provide a one-stop location for assistance in rural counties. Employment counseling and training are the primary services provided at the CERCs, but social services,

health/mental health services, child support enforcement, and emergency assistance are also available. CERCs have partnered with community colleges, and also with nonprofit organizations such as faith-



Monica Hylton, Virginia Employment Commission

based organizations to provide emergency food assistance and other services.

An ERS-funded study of the Virginia initiative found that the CERCs helped customers obtain information about a variety of services more conveniently. The CERCs also improved communication among partnering agencies and strengthened ties among community service providers. This cooperation led to improved service delivery in the community, which resulted in low-income customers who were better informed about available employment services.

Operating the CERCs increased staff workload and strained the resources of the partnering agencies and organizations significantly. Office space was also insufficient. Service integration among agencies was limited due to the short setup time for opening CERCs. With Federal encouragement for States to co-locate services, the Virginia CERC experience helps in understanding the difficulties involved. Despite implementation challenges, the Virginia CERCs illustrate a useful strategy to help States respond to large job losses in rural communities. **W**

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This article is drawn

from . . .

Using One-Stops To Promote Access to Work Supports—Lessons From Virginia's Coordinated Economic Relief Centers: Final Report, by Diane Paulsell and Melissa Ford, ERS project repre-

sentative: Karen S. Hamrick, E-FAN-03-010, USDA/ERS, November 2003, available at: www.ers.usda.gov/publications/efan03010/

Coordinated Economic Relief Centers: Locations and service areas in Virginia

CERC location	Service area	Population	Job loss from plant closings
Marion	Smyth County	33,081	2,380 over 1998-2002
Martinsville	Martinsville City Patrick County Henry County	57,930 15,416 19,407	} 9,000 over 1999-2002
South Boston	Halifax County	37,355	
Clarksville	Mecklenburg County	32,380	

Source: Population is from 2000 Census of Population; job loss is from the Virginia Employment Commission.



One in Five Rural Counties Depends on Farming

Farming no longer dominates the rural economy. Of the more than 2,000 nonmetropolitan (nonmetro) counties in 2000, 420 were farming-dependent, down from 618 in 1990. ERS classified a county as farming-dependent if 15 percent or more of earnings (in 1998-2000) or employment (in 2000) came from farming.

Farming-dependent counties, located largely in the Great

Plains, accounted for 10 percent of farm proprietors, although they garnered 21 percent of total U.S. farm cash receipts in 2000. Many farm counties owe their dependence on farming less to an overabundance of agriculture than to a dearth of other industry. Technological change and farm consolidation are

often used to explain the loss in farm population and support services, but the reverse relationship may be true: the lack of off-farm job opportunities and outmigration, particularly of young adults, may have spurred farm consolidation in these farm counties. (See "How Does Farmland Retirement Affect Rural Counties?" page 9.)

The economies of other nonmetro counties depend more on industries such as

machinery manufacturing, health services, telemarketing, prisons, or recreation than on farming. While 37 percent of farm cash receipts went to farms in these counties, their farms tend to be relatively small, with receipts per proprietor less than half those in farming-dependent counties in 2000. Farm operators in other nonmetro counties rely more on off-farm work than do farm operators in farming-dependent counties.

Although the overall metro economy depends on farming for less than 1 percent of earnings, 40 percent of all farm operators are located in metro counties, and they account for 42 percent of U.S. farm cash receipts. Some of these farms are in sparsely settled sections of metro counties, and many face suburban encroachment. While some metro farms, especially in the West, are very large, metro farm operators are the most likely to have off-farm employment. Less than half considered themselves to be primarily farmers in 1997.

Farming is not disappearing in the United States: farm jobs declined by less than 2 percent in the 1990s, following a 15-percent decline in the 1980s. While most farm counties lost some farm jobs during the 1990s, one in five had at least 10 percent more farm jobs at the end of the decade than at the beginning. These gains, often associated with large poultry or livestock operations, occurred both in and outside of the Great Plains. **W**

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This finding is drawn from . . .

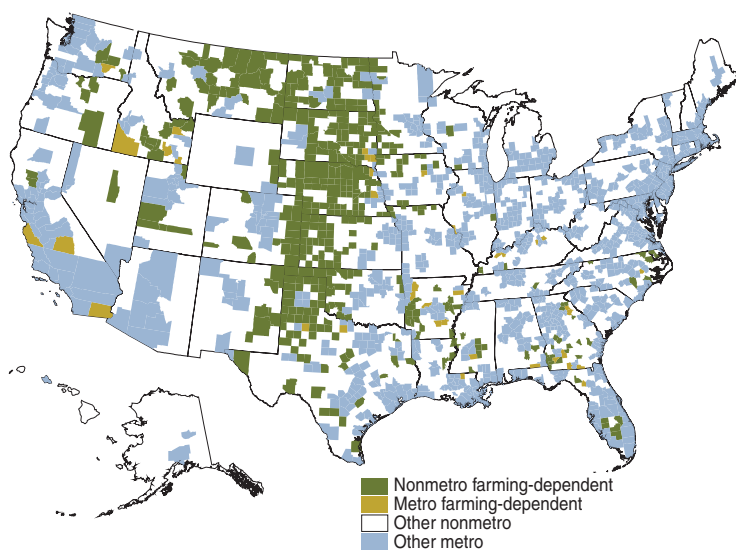
The County Typology page of the ERS Briefing Room on Measuring Rurality: www.ers.usda.gov/briefing/rurality/typology/

Farm and nonfarm statistics by type of county

	Nonmetro		Metro	Total
	Farming-dependent	Other		
Number of counties	420	1,620	1,070	3,110
	<i>Percent</i>			
Farm proprietors	10.4	49.8	39.9	100.0
Farm cash market receipts	20.8	37.1	42.1	100.0
Farmland (1997)	25.0	50.5	24.5	100.0
Nonfarm jobs	0.9	13.7	85.4	100.0
Total population	1.2	16.2	82.7	100.0

Source: Bureau of Economic Analysis REIS files, 2000; 1997 Census of Agriculture.

Farming-dependent counties by metro status, 2000



Note: The 39 metropolitan counties that meet the farming-dependent county definition are not analyzed in this finding.

ARMS Data Offer New Perspectives on Cropping Practices

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The Agricultural Resource Management Survey (ARMS) is USDA's primary vehicle for collecting information on agricultural resource use, production practices, farm costs and returns, farm financial conditions, and the economic well-being of America's farm households. Sponsored jointly by ERS and USDA's National Agricultural Statistics Service (NASS), ARMS was initiated in 1996 as an effort to consolidate and integrate the former USDA cropping practice, chemical use, and farm costs and returns surveys (which date back several decades). ARMS data support ERS's research and analyses to inform USDA, administration, congressional, and industry decisionmakers when weighing alternative policies and programs that involve the farm sector or affect farm families.

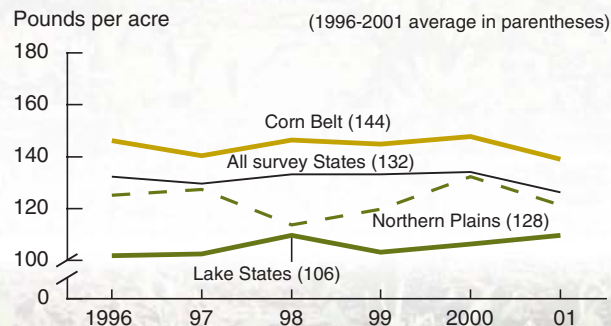
ARMS data also underpin USDA's annual estimates of net farm income, subsequently provided to the Bureau of Economic Analysis for developing annual estimates of gross domestic product and personal income. The ARMS survey fulfills a congressional mandate that USDA provide annual cost-of-production estimates for commodities covered under farm price support legislation. ARMS also provides data regarding chemical use on field crops as required under environmental and food safety legislation. Key technology adoption decisions tracked by ARMS include the choice of bioengineered seed, the selection of waste management practices by livestock producers, the use of chemical and biological pest management alternatives, and the use of information management technologies—ranging from precision farming in crop production to marketing commodities and buying inputs via the Internet.

Complementing the breadth of ARMS data is their potential use for conducting detailed analyses. To illustrate, let's look at a small part of the data related to commercial nitrogen (N) fertilizer application rates (N-application rates) on corn. Nitrogen is an essential input to high-yield corn production. However, nitrogen contained in runoff

from farm fields can contribute to degradation of water quality in U.S. rivers and estuaries. Keeping tabs on nitrogen fertilizer application rates can help farmers and policymakers face the challenge of protecting water quality without compromising corn yields.

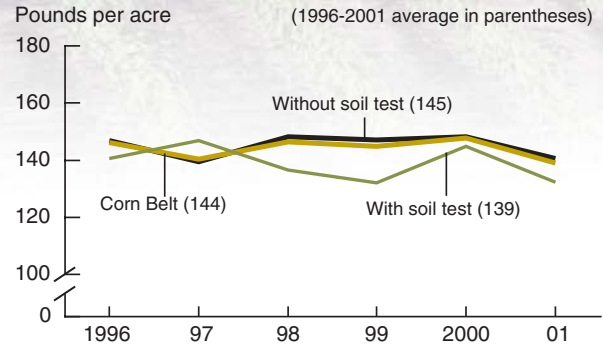
Corn yields are influenced by a variety of factors: agronomic (for example, soil productivity), climatic (for example, adequate and timely rainfall), and cropping practices (for example, nutrient application). N-application rates in the Corn Belt are much higher on average than in other major corn regions because agronomic and climatic conditions there are generally more favorable for attaining higher corn yields. N-application rates in the Northern Plains tend to be lower than in the Corn Belt due to climatic constraints on yields. Contributing to lower commercial nitrogen application rates in the Lake States is the more widespread availability of supplemental nitrogen from manure associated with livestock production in that region.

Nitrogen fertilizer application rate on corn, by region



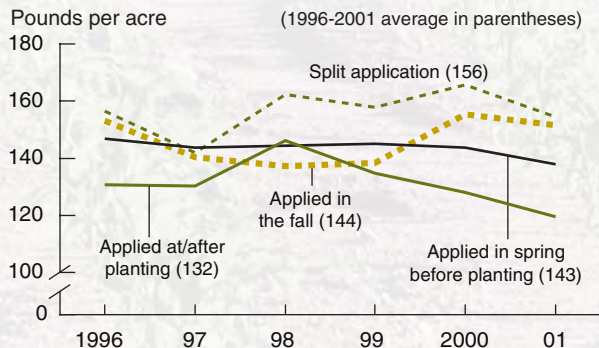
N-application rates also appear to vary as a result of prior information about existing soil nitrogen levels, obtained from soil tests and other means. In the Corn Belt, for example, about 17 percent of corn acres were tested for soil nitrogen during 1996-2001. Farmers applied about 6 pounds of N per acre (4 percent) less on those acres than the average for corn acres not tested. This reinforces one of the purposes of ARMS: better information can help improve farmers' decisions about cropping practices in order to reduce environmental damage without reducing profits.

N-application rate on corn, with/without soil test for nitrogen, Corn Belt



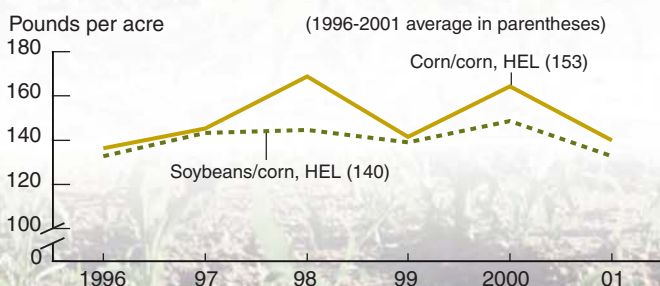
N-application rates are even more variable when timing and method of application are considered. Timing and method of application in turn are influenced by a variety of factors, including weather. Spring application before planting was the most common. The next most common timing options were split application and application at or after planting.

N-application rate on corn, by timing of nitrogen application



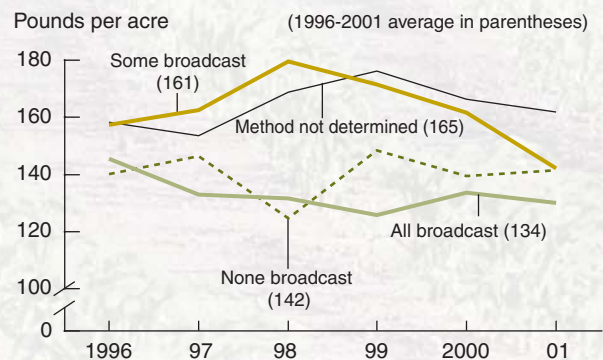
On highly erodible cropland (HEL), N-application rates tend to be lower when corn is planted after soybeans than when corn follows corn, because soybeans can fix (extract) nitrogen from the atmosphere. Thus, corn planted after soybeans requires less nitrogen from commercial fertilizer.

N-application rate on corn, by rotation on cropland designated HEL



On fields where all nitrogen was applied at or after planting, N-application rates averaged about 12 pounds less than on fields where nitrogen was applied either exclusively in the spring before planting or in the fall. Application rates in the spring before planting were lowest when all nitrogen fertilizer was broadcast—the most common method of application.

All N applied in spring before planting, by method



These examples are representative of the wide range of detailed information available in ARMS. For more information on ARMS as well as additional data on crop production practices, farm costs and returns, and farm financial management, visit...

The ERS Briefing Room on ARMS, www.ers.usda.gov/briefing/arms/

For data on crop production practices, see www.ers.usda.gov/data/cropproductionpractices/

For data on costs and returns, see www.ers.usda.gov/data/costsandreturns/

For data on farm financial management, see www.ers.usda.gov/data/farmfinancialmgmt/

Where Will Demographics Take the Asia-Pacific Food System?

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This article presents findings from *Where Demographics Will Take the Food System*, first released at the Asia Pacific Economic Cooperation Forum Ministerial Meetings in Bangkok, Thailand, October 2003. Fifteen Pacific Rim countries contributed to the original report, which was jointly sponsored by the Pacific Economic Cooperation Council, ERS, the Farm Foundation, the East-West Center, and the College of Tropical Agriculture and Human Resources at the University of Hawaii.

The population of the Asia-Pacific region is projected to rise by more than 400 million people in the next 2 decades, a 16-percent increase over 2000. This increase is equivalent to the combined populations of Japan and the United States today. Although economic growth and prices are closely monitored drivers of food demand, demographic changes—urbanization, growth in populations, and changes in the age structure of populations—will likely have more profound long-term implications for the region's food system.

Demographic change was first connected to food demand and supply 200 years ago when Thomas Malthus asserted that "the power of population is infinitely greater than the power in the earth to produce subsistence for man." He later amended his pessimistic view about the earth's capacity to produce food in acknowledging the promise of technological change in increasing food supply. For the intermediate term, population growth and other demographic changes are more likely to define food markets than supply constraints.





In the Asia-Pacific region, an admittedly vast landscape, three demographic trends leading up to 2020 will challenge the food system. First, a more urban population will demand a more varied diet, with a premium on convenience. It will also challenge the logistics of the food supply. Second, as consumers migrate within the Asia-Pacific region, primarily from lower income economies (for example, Mexico, Philippines) to higher income destinations (for example, Australia, Hong Kong, United States), individual food systems must tailor their trade and production to new demographic realities. Finally, the overall aging of the population will reduce the level (to reflect less activity and fewer caloric needs) and change the composition (for example, more fish and fruit) of food demand.

Rapid Urban Population Growth

The most significant demographic change in the Asia-Pacific region in the next two decades will be the rapid growth of urban populations. Some urban areas are already distressingly large and are confronting poverty, pollution, and congestion. Future urban growth will test the efficiency and capacity of the region's food system to

Marketing food products in the Asia-Pacific region will increasingly focus on densely populated urban centers.

deliver a continuous flow of safe, reasonably priced fresh and processed foods.

Asia-Pacific's urban population is projected to grow by over 580 million people between 2000 and 2020, an increase of about 45 percent. For the first time in history, the region's urban population surpassed its rural population in the last decade. This rapid urban growth is due to high birth rates, migration from rural to urban areas, and immigration into urban areas.

Urban growth rates are expected to be the most rapid in China and Southeast Asia; more moderate in Latin America, North America, and Oceania; and slowest in East Asia. The most rapid rates of growth will occur in Vietnam, Indonesia, Singapore, and the Philippines. China's urban population is expected to grow by

300 million people (67 percent) in the next 20 years, a staggering number.

In contrast, rural populations are expected to shrink in practically all of the region's countries. The largest rural declines will occur in China, where outmigration and slower growth will reduce rural population by more than 145 million people between 2000 and 2020.

The region's rapid rate of urbanization is driven by technological, social, cultural, and economic changes. Urban development is a natural consequence of agricultural surpluses, economic specialization, more efficient allocation of resources, and higher incomes.

Urban diets differ from those in rural areas, largely due to higher incomes and the substitution of animal products, fruits, and vegetables for more traditional food staples like grains. Diets in urban areas tend to be more diverse, a function of both supply and income. Urban dwellers tend to eat away from home more frequently and consume more convenience foods. In developing and middle-income economies, access to reliable electricity promotes greater consumption of perishable commodities, and modern infrastructure allows food products to travel farther in less time.

Work and lifestyles in urban areas tend to be more sedentary than those in rural areas, leading to lower per capita energy expenditure and lower per capita caloric requirements. Higher incomes, lower food prices, and urban consumers' propensity to eat more than they need lead to a greater overweight problem in urban areas. Urban and rural differences in work and lifestyles are more pronounced in developing economies.

Marketing food products in the Asia-Pacific region will increasingly focus on densely populated urban centers, such as the Hong Kong-Shenzhen-Pearl River Delta area, Shanghai, Jakarta, Bangkok, Manila,



Santiago-Valparaiso, and Lima-Callao. Many of these urban areas are coastal and have modern port facilities, making them easily accessible to foreign suppliers. In some instances, foreign suppliers are more competitive in these coastal urban markets than are inland producers who face inadequate infrastructure.

400 Million More People To Feed

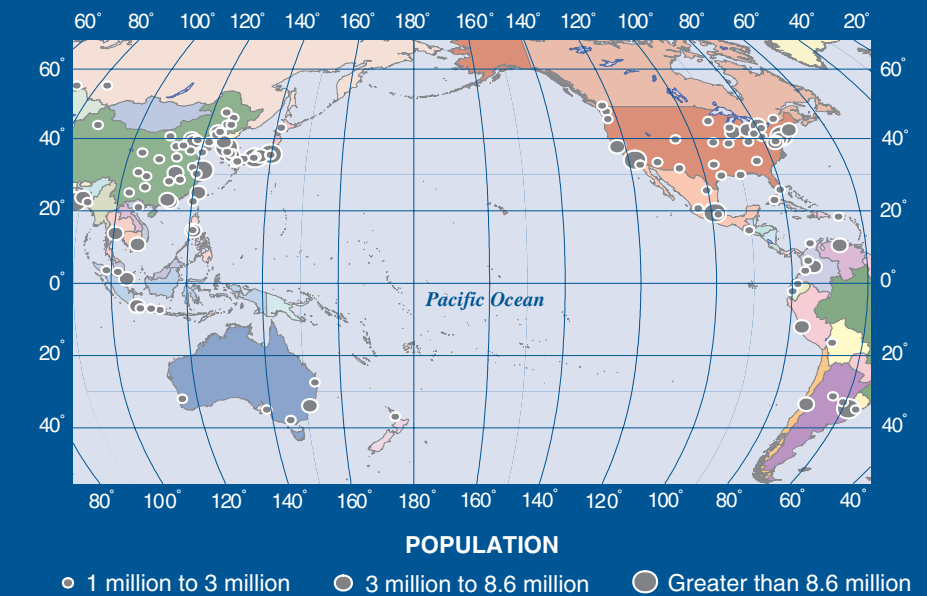
Although the population in the Asia-Pacific region is expected to grow from 2.6 billion in 2000 to 3.0 billion in 2020, this rate of growth is slower than for the rest of the world. Asia-Pacific's share of the world population will decline from 43 percent in 2000 to 40 percent in 2020, as countries in Africa and the Middle East grow faster. Since the 1960s, global population growth, including the Asia-Pacific region, has slowed, marking a shift from the geometric growth rates of previous decades. Currently, the number of people added to the world and the Asia-Pacific region is declining each year. The world population is projected to level off at about 9-10 billion after 2050, with the Asia-Pacific region leveling off at about 3 billion before declining in the 2040s.

Population growth throughout the region will not be evenly distributed. By 2020, the largest absolute increase will occur in China (160 million), followed by Indonesia (60 million) and the United States (50 million). In contrast, the Russian Federation's population has been declining, and by 2007, Japan's population will begin to decline.

Despite a declining rate of growth in China, the absolute increase in its population over the next several decades will remain large relative to other economies in the region. China's population is expected to decline around 2030, following the population declines of Korea in 2027 and Taiwan in 2029. The United States, surprisingly, will grow faster than



Many growing urban areas in developing countries are coastal and have modern port facilities, making them more accessible to foreign suppliers



some developing economies after 2020 due to immigration and high fertility of recent immigrants.

Though population growth in the Asia-Pacific region is relatively slow, patterns of immigration matter greatly in the region. In 2000, 760,000 more people entered the region than exited; that number is still small relative to the region's average annual natural increase of 24.5 million. However, there is significant

migration within the region. Migrants tend to favor economies with higher per capita income: Singapore, Hong Kong (China), Canada, New Zealand, Australia, Brunei, the United States, and Russia. Net migration to the United States alone exceeds 1 million annually. Although Japan's economy has high per capita income, that country's strict immigration policies keep its population homogeneous, as is true for Korea and Taiwan.

Demographic indicators for the Asia-Pacific region

Economy*	Total population			Urban population		
	2000	2020	Change	2000	2020	Change
	Million			Million		
Australia	19.2	22.4	3.2	17.4	21.4	4.0
Brunei	0.3	0.5	0.1	0.2	0.4	0.1
Canada	30.8	35.4	4.6	24.2	29.4	5.1
Chile	15.2	18.0	2.9	13.0	16.2	3.2
China	1,262.5	1,424.1	161.6	456.4	764.2	307.7
Colombia	39.7	52.2	12.5	29.8	43.2	13.4
Ecuador	12.9	18.0	5.1	8.1	12.8	4.7
Hong Kong, China	7.1	8.7	1.5	7.1	8.7	1.5
Indonesia	224.1	287.9	63.8	91.9	168.2	76.3
Japan	126.9	124.1	-2.8	99.9	102.5	2.6
Korea	47.3	51.5	4.3	38.7	46.0	7.3
Malaysia	23.3	34.4	11.1	13.4	23.6	10.2
Mexico	99.9	124.7	24.7	74.3	98.8	24.4
New Zealand	3.8	4.5	0.7	3.3	4.0	0.7
Peru	27.0	35.6	8.6	19.7	28.2	8.6
Philippines	79.7	111.3	31.6	46.7	79.5	32.8
Russia	146.0	139.0	-7.0	106.4	104.3	-2.2
Singapore	4.2	7.5	3.4	4.2	7.5	3.4
Taiwan	22.3	24.3	2.0	18.3	20.8	2.5
Thailand	62.4	71.9	9.5	12.4	19.2	6.9
United States	282.3	336.0	53.7	218.0	276.3	58.3
Vietnam	78.5	99.9	21.4	18.9	34.7	15.8
Asia-Pacific region	2,615.4	3,031.8	416.4	1,322.3	1,909.8	587.5
World	6,078.7	7,516.5	1,437.8	2,872.2	4,201.7	1,329.5

* Members of the Pacific Economic Cooperation Council.

Source: UN data (medium fertility scenario) from U.S. Census database.

Not surprisingly, outmigration is most common in the lower income economies of the Philippines, Peru, Ecuador, Vietnam, Colombia, China, Mexico, and Indonesia. Net outmigration from China, Mexico, and Indonesia has totaled 200,000 to 300,000 annually in recent years.

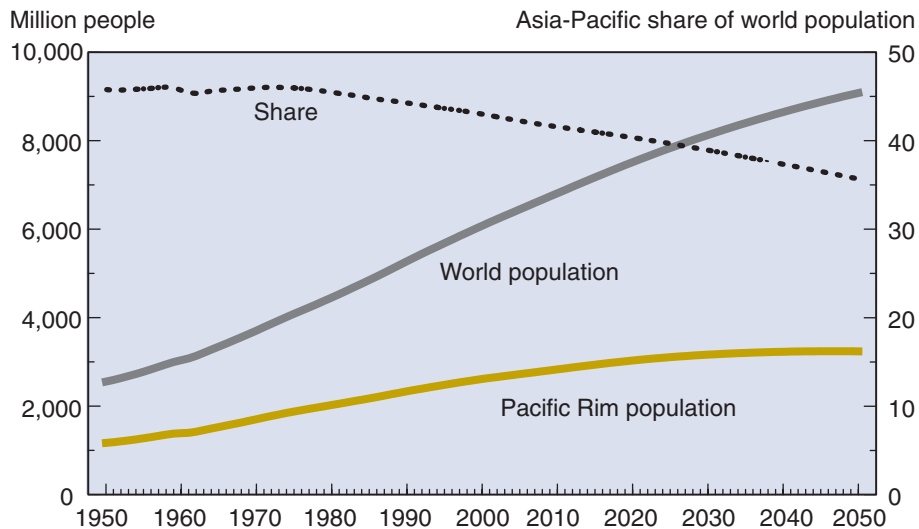
Population growth will undoubtedly challenge the food system, though not equally across the region due to different rates and distribution of growth. Japan's declining population, for example, implies lower food demand in this affluent nation, a leading importer of food and agricultural products. Russia's declining

Population growth will undoubtedly challenge the food system, though not equally across the region due to different rates and distribution of growth.

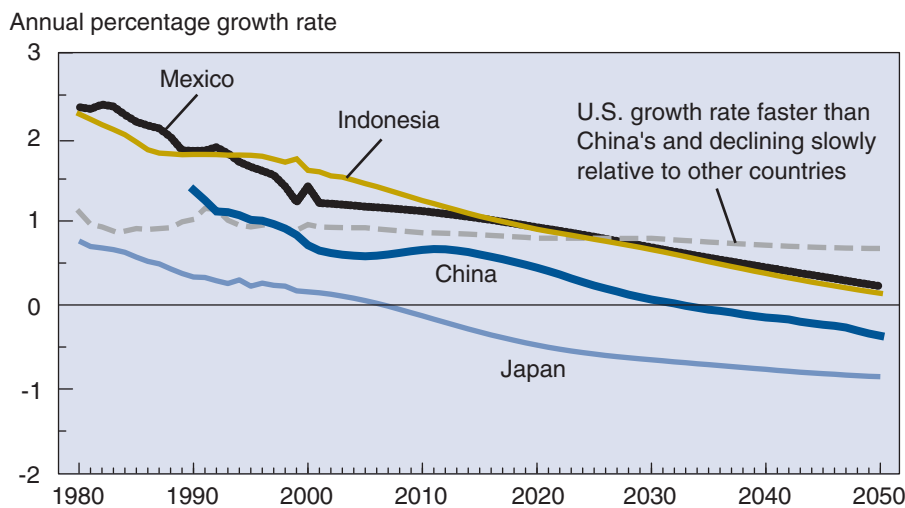
population, when combined with its social and economic restructuring, could recast the nation as a supplier in international food markets. More rapid population and income growth in developing and middle-income economies will increase their influence in the Pacific food system, altering production, consumption, and trade patterns.

Immigration affects food demand in two ways. First, aggregate demand in the receiving economy rises immediately. Since immigrants often have higher fertility than native residents, they can boost population growth in subsequent years. In the United States, for example, immigration plus the higher fertility of recent immigrants accounted for about 60 percent of population growth in the 1990s. Second, the rise in the immigrant share of a population can affect an economy's food preferences. This has occurred in Australia and Canada (with a rising Asian share of its population), as well as in the United States (with rising shares of Hispanics and Asians). These changes may be short-term, with ethnic dietary differences becoming less pronounced over time, as immigrant offspring adopt the food preferences of their new country and as the new country's cuisine is, in turn, affected by the influence of successive waves of new immigrants.

World and Asia-Pacific population leveling off



U.S. population growth rate projected to be higher than most major countries in the region



Source: United Nations.

A Graying Population: Declining Food Demand and a Tax on the Economy

Between 2000 and 2020, average life expectancy in the Asia-Pacific region is expected to rise from 72 to 77 years, and the median age from 30 to 36 years. The population age 65 and older will increase from 200 million in 2000 to 370 million in 2020. Virtually all the economies in the

region have shifted from high to low birth and death rates, leading to a projected 8-percent decline in the number of young people from 2000 to 2020, a modest 17-percent rise in the number of working-age people, and a very rapid rise (almost 80 percent) in the number of older people. Japan's population is aging the most rapidly in the region. Population aging is not unique to the Asia-Pacific region, but it is

happening more rapidly here and in Western Europe than in the rest of the world.

Countries in the region with the oldest age structures are Australia, Canada, New Zealand, the United States, and those in East Asia. These economies experienced the demographic transition—the decline in fertility and mortality rates—a long time ago, driven by income growth, medical breakthroughs, health care investments, and public policy. Increased participation of women in the work force has also contributed to lower birthrates. According to a Brown University researcher, China's family planning policies in the 1970s—including later marriage, greater spacing between births, and fewer children—facilitated the country's demographic transition. On the other hand, Asia-Pacific economies with lower per capita income have younger age structures, their transition occurred more recently, and in some cases, may not be complete.

Advantages of slower population growth (resulting from the demographic transition) include fewer dependent young people and a relatively larger productive segment of the population. The declining share of young people in the population, however, will eventually shift to a greater share of older people as the working segment ages and retires. Although older people may have savings, they may need health and medical services, which can siphon family and societal resources from other economic uses.

The changing age structure of the Asia-Pacific population affects food demand directly and indirectly. One direct effect is lower food demand. With an aging population, food demand declines as activity levels and caloric needs decline. A second direct effect is change in dietary composition and the frequency of eating out. Consumption of livestock products is declining in the region's developed



*Japan's food market will
feel the impact of an aging
population more so than
other Asia-Pacific countries.*

The indirect effects of demographic change are felt in the general economy. Changes in the relative proportion of "economically active" and "economically dependent" components of a population influence economic growth, which in turn, directly affects an economy's food demand and supply.

The *dependency ratio* measures change in the relative proportions of "economically active" and "economically dependent" shares of a population. This is the ratio of the younger (age 0 to 14) and older (age 65 and over) populations to the working-age population (age 15 to 64). In the Asia-Pacific region, the dependency ratios for most of the high-income economies are projected to rise over the next two decades due to population aging. On the other hand, the dependency ratios for the lower income economies are projected to decline, providing an opportunity for these economies to save and invest resources for purposes other than raising/educating children and taking care of the elderly. This may give these economies a "demographic bonus," or short-term economic boost.

However, demographers at the East-West Center are quick to point out that this "boost to development is not automatic...because there is no guarantee that governments, institutions, or individuals will spend the savings wisely." In the wealthier economies where the dependent component of the population is rising, labor shortages and higher wages may

eventually lead to capital-labor substitution, with more highly productive workers supporting a relatively larger dependent segment of the population. Labor shortages, such as Japan's shortage of construction workers, may also lead to less restrictive immigration policies.

Age structure also affects the propensity to save and invest, which relates to an economy's productive capacity. Recent research suggests that population aging in Australia, Canada, New Zealand, and the United States will reduce savings and investment rates over the next 20 years, with spillover effects on growth, productivity, and the food system.

Policy Implications

Powerful economic forces generated by demographic changes require the close attention of food system participants and policymakers. Some demographic changes—such as declining fertility and mortality rates and the aging of a population—take years to manifest themselves. Others, like urbanization, may have more immediate impacts.

The food marketing system must adjust to greater concentrations of people in urban areas.

Food system efficiency as well as agricultural productivity must be a fundamental public policy goal if we're to feed growing urban populations. Public and private investment in domestic food system infrastructure and more liberal food trade policies will be essential to ensure cost- and operation-efficient food systems to meet the food demand needs of urban populations.

Less centralized distribution systems will play a more significant role in easing traffic congestion and help reduce other costs of conducting business in densely populated cities.

Higher incomes and greater food demand in urban areas must be balanced against more sedentary lifestyles and

economies, while consumption of fruit and vegetables is increasing.

According to ERS research, older people eat more fresh fruit, fish, eggs, lettuce, and nonfried potatoes. Japan's food market will feel the impact of an aging population more so than other Asia-Pacific countries. Because of Japan's rapidly growing share of older people, for example, per capita meat consumption there is likely to see a significant decline. Older Japanese tend to eat less meat and more fresh fruit, rice, and fresh fish due to their established eating habits.

Older people are also less likely to eat out than are younger people. Consequently, Japanese retirees are clearly more likely to eat their midday meal at home, which has important implications for lunchtime food service. In general, older people tend to prefer convenience, smaller servings, and, when they do eat out, full-service restaurants.



Digital Vision

lower per capita caloric needs. More affluent and health-conscious urban consumers will demand greater quality, variety, and convenience from the food system.

The variability of size and growth of different populations has important implications for food market development strategies.

Food marketing and investment strategies will, more than ever, require customization for each country. Japan is currently the largest net importer of food in the world, but its population is aging rapidly and will soon decline. Investment and marketing strategies must address an overall reduction in food consumption and changes in the types of food that consumers demand. In the United States, where immigration is expected to result in more rapid population growth, strategies must target many more consumers, as well as changes in the racial/ethnic mix. The largest absolute growth in population across the Asia-Pacific region will be in China. This, combined with rapid urbanization, requires a focus on market logistics in a densely populated area and on the

changing preferences of higher income consumers.

Aging populations require a lighter, healthier food "basket."

The aging of the region's population will slowly lead to lower per capita food consumption and a shift in the composition of food demand. Changes in the composition of food demand are likely to include more fresh fruits and vegetables, less red meat, and less eating out. These changes will directly affect producers, processors, retailers, and foodservice establishments.

Aging populations may have adverse effects on economic growth, a leading driver of food demand.

A growing older and retired population, along with a shrinking workforce, will probably have negative effects on income growth in the Asia-Pacific region. Extending the working lives of people, raising worker productivity so that fewer people can support more retirees, and reducing public obligations for pensions and health care services are some possible responses. W

This article is drawn from . . .

"Where will demographics take the Pacific food system?" by William Coyle, in the Macroeconomic Assumptions chapter of the ERS Briefing Room on Agricultural Baseline Projections, available at: www.ers.usda.gov/briefing/baseline/macro04.htm


Pacific Food System Outlook 2003-2004, Where Demographics Will Take the Food System, Pacific Economic Cooperation Council, October 2003, available at: www.pecc.org/food/

The Future of Population in Asia, The East-West Center, Population and Health Studies Program, Honolulu, 2002, available at: www.eastwestcenter.org/res-rp-publicationdetails.asp?pub_ID=1300

Food and Agricultural Commodity Consumption in the United States: Looking Ahead to 2020, by Biing-Hwan Lin, Jayachandran N. Variyam, Jane Allshouse, and John Cromartie, AER-820, USDA/ERS, February 2003, available at: www.ers.usda.gov/publications/aer820/

Emergency Providers Help Poor Households Put Food on the Table

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In 2003, USDA spent \$41.7 billion on 15 food assistance programs aimed at improving the nutrition and well-being of needy Americans. The Food Stamp Program, the largest of the programs, served over 21 million people, and 16.4 million school children received free or reduced-price lunches from the National School Lunch Program. Yet, 4.3 million American households visited a food pantry, and 1.1 million people ate a meal at an emergency kitchen in a typical month in 2001.

Why do people turn to emergency food assistance providers? Who are food pantries and emergency kitchens serving? Does emergency food assistance supplement or replace Federal food assistance? Emergency food providers serve a diverse population, and they do not serve the same purpose for all users. For some, emergency food providers help the household weather a short-term setback, like an unexpected medical bill or car repair. For others, especially those who visit emergency kitchens, this food assistance may be their one hot meal a day.

According to a two-phase national study funded by ERS, many food pantry users across the Nation also participate in the Food Stamp Program and the National School Lunch Program, suggesting that their food pantry or emergency kitchen use supplements, not replaces, Federal food assistance. Another study in Kansas City, MO, found just that: Some low-income households occasionally visit food pantries to supplement food stamp benefits. Emergency food users who do not participate in the Food Stamp Program most commonly report that they do not apply for the program because they doubt that they are eligible, the application process is too difficult, or they do not want help from the Government.

The ERS-funded study estimates that almost 33,000 food pantries and over 5,000 emergency kitchens operate in the United States (see box, "Who Provides Emergency Food?"). Food pantries and emergency kitchens are the street-level providers of emergency food assistance, distributing food directly to needy house-

holds. Food pantries provide bags of food to households to prepare meals at home. Emergency kitchens provide prepared meals that are eaten at the site.

Food pantries and emergency kitchens, together with food banks, food rescue organizations, and emergency food organizations, make up the country's emergency food assistance system (EFAS). EFAS organizations generally provide food to anyone who requests it, although some may limit access based on a person's place of residence or household income. Because of the minimal eligibility restrictions and documentation requirements, households experiencing a sudden or unexpected need can quickly access the system, even on an emergency basis.

Who Uses Emergency Food?

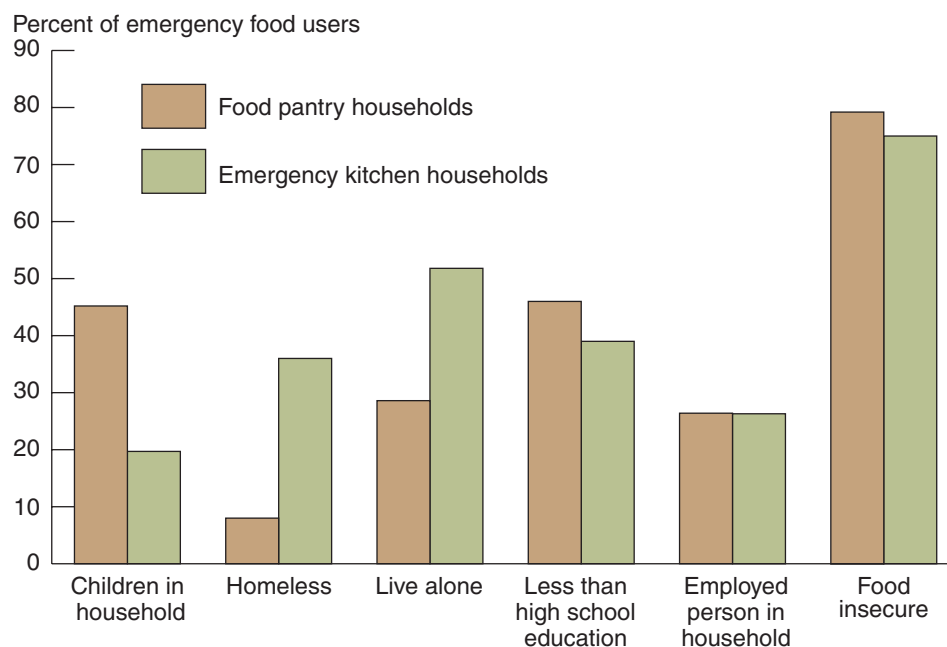
Food pantries and emergency kitchens provided an estimated 198 million meals in an average month in 2000. During a typical month in 2001, about 4.3 million different households, including 8.0 million adults and 4.5 million chil-



Nancy Jagelka, Bread for the City

Many food pantries are at their busiest during the holiday season. Over 7,000 families in Washington, DC, received a holiday meal through Bread for the City's 2003 Holiday Helping Campaign.

Food pantries and emergency kitchens serve a diverse population



dren, received food from pantries, and about 1.1 million people (856,000 adults and 275,000 children) received meals from emergency kitchens. These findings suggest that the average food pantry household receives food for 14 meals per person per month, and the average emergency kitchen user receives 14 meals per month.

Emergency food providers serve a diverse clientele in terms of household composition, race and ethnicity, education, and employment. About half of households that visit food pantries have children in them, and few of the families are homeless. People that use emergency kitchens, on the other hand, are most likely to live alone, and almost 40 percent are homeless. About 46 percent of adult pantry users and 39 percent of adult emergency kitchen users have less than a high school education. Although their low levels of education are likely to limit employment possibilities, about a fourth of

Who Provides Emergency Food?

The ERS-funded study gathered information from over 3,000 food pantries and emergency kitchens between March and November 2000. Food pantries and emergency kitchens were selected from a list of organizations identified by food banks, food rescue organizations, emergency food organizations, and other social service agencies.

The study found that food pantries and emergency kitchens are typically small, community-based organizations. About two-thirds of food pantries and emergency kitchens report that they are affiliated with a religious organization. On an average day, 60 percent of food pantries serve fewer than 25 households. Over half operate with an annual budget of less than \$5,000. Emergency kitchens vary more in size than food pantries. Just under a third of emergency kitchens have annual budgets of less than \$5,000, while more than a fourth had an annual budget of \$20,000 or more. About a third of emergency kitchens serve fewer than 50 people at a typical lunch, the most common meal served at emergency kitchens. However, in the largest 15 percent of emergency kitchens, over 200 people received lunch on a typical day.

Almost all organizations in the EFAS rely on volunteers to assist in their operations. About a fourth of food pantries and half of emergency kitchens did not employ a single paid staff person. Most food pantries and emergency kitchens are connected to an organization—a food bank, food rescue organization, or emergency food organization—that acts as a “wholesaler,” receiving food donations from a variety of sources and distributing them to food pantries or emergency kitchens. Most wholesalers in the EFAS have paid employees, as well as volunteers.

In 2003, USDA provided almost \$400 million worth of food to States for distribution to emergency food providers, through The Emergency Food Assistance Program (TEFAP).

In addition, USDA provided about \$50 million in administrative funds to State agencies to support their food distribution. State agencies must establish income eligibility standards to ensure that TEFAP foods provided for household distribution go only to low-income households. For TEFAP foods used in meal preparation at emergency kitchens, no eligibility standards are required, but providers must serve predominately needy persons. Although the amount of commodities available through TEFAP has varied throughout the history of the program, USDA commodities accounted for nearly 14 percent of all food distributed by emergency food providers in 2000.



Nancy Jagelka, Bread for the City

households that use pantries or emergency kitchens have an employed person in them.

Over 90 percent of food pantry households and 85 percent of emergency kitchen households have incomes below 130 percent of the poverty line (the income cutoff for Food Stamp Program eligibility). Monthly income averages \$781 for pantry households and \$708 for emergency kitchen households. About three-fourths of food pantry and emergency

kitchen households are food insecure, which means they have a limited ability to acquire food because of financial constraints. Two in five emergency kitchen households and one in four pantry households have said that an adult in the household did not eat for an entire day at some time in the last year because they did not have enough money to buy food.

Many EFAS Users Participate in Federal Food Assistance Programs...

The ERS-funded study collected extensive information between August and November 2001 about emergency food users' eligibility for and use of Federal food assistance programs. Program eligibility was calculated using information about a household's income and assets, and the number and age of children in the households. According to the study, 69 percent of pantry households and 45 percent of emergency

kitchen households used both private and Federal food assistance.

EFAS households were more likely to be eligible for and to participate in the Food Stamp Program (FSP) than any other Federal food assistance program. About 9 in 10 pantry households and more than 8 in 10 emergency kitchen households were eligible for the FSP. Almost half of pantry households and more than a third of emergency kitchen households received food stamps in the year before the survey, with most receiving food stamps and emergency food assistance in the same month.

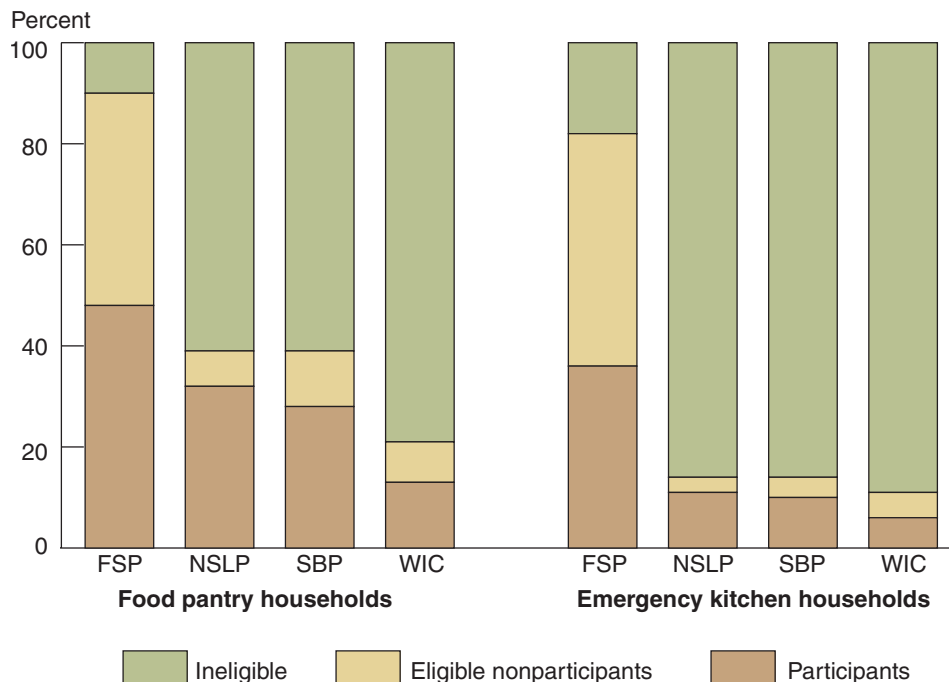
While more pantry and emergency kitchen households participated in the FSP than in other Federal food assistance programs, the rate of participation among eligible households was highest in the National School Lunch Program (NSLP). Over 80 percent of the households who visited a food pantry or emergency kitchen and met the eligibility require-



Ken Hammond, USDA

USDA outreach grants support efforts by emergency food providers to prescreen families for Food Stamp Program eligibility and assist them with the application process.

Food stamps are the most common Federal food assistance received by emergency food users





Michael S. Yamashita, Corbis

Emergency kitchens across the United States serve almost half a million meals on an average day.

ments for the NSLP had a child who received free or reduced-price lunches. Children in eligible EFAS households participated at a slightly lower rate (70 percent) in the School Breakfast Program (SBP). EFAS households were less likely to participate in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), which provides benefits only to pregnant and breastfeeding low-income women and children up to age 5 who are at nutritional risk.

...Though Many Eligible Households Do Not

Almost half of pantry and emergency kitchen users were FSP-eligible nonparticipants in the year before the survey—that is, they were eligible to receive food stamps but did not. Between 70 and 80 percent of these eligible nonparticipants reported that they had not even applied to the FSP in the year before the survey.

These eligible nonparticipants gave a variety of reasons for not applying. Over a

Emergency food users gave a variety of reasons for not applying for food stamps

Reasons for not applying	Food pantry users	Emergency kitchen users
	Percent of eligible nonparticipants who have not applied for food stamps	
Doubt eligibility, sanctioned or lost eligibility	46.8	36.3
Prefer not to receive help from the Government	8.8	11.0
Too much paperwork, can't fill out application forms	8.2	8.2
Small benefits are not worth the effort	8.2	4.2
No longer need food stamps	6.4	9.3
Do not know about the Food Stamp Program or how to get benefits	5.1	11.5
Do not have transportation to the food stamp office	4.9	2.9
Feel embarrassed or uncomfortable about getting food stamps	4.6	7.4
Questions are too personal	1.2	1.3
Food stamp office hours are inconvenient	1.0	0.5
Negative attitudes of food stamp office staff	0.8	0.4

For people living paycheck to paycheck, an unexpected expense, such as a car repair, can necessitate a trip to a food pantry or emergency kitchen.



USDA/ERS



Ken Hammond, USDA

third who visited emergency kitchens and almost half who visited food pantries doubted that they were eligible, with some saying that they had been sanctioned or lost eligibility in the past. Another 10 percent preferred not to receive help from the Government. For this group, emergency food assistance providers appear to operate as a substitute for Federal food assistance. About 8 percent said that there was too much paperwork involved in applying for the FSP, and 4 to 8 percent said that the small benefits were not worth the effort. Smaller numbers said that they did not apply because they did not know about the program or how to apply for it. Emergency food providers may be a valuable link to these households, and could provide information about Federal food assistance programs and the application process and help households determine their expected benefits. Only 16 percent of food pantries and emergency kitchens, however, report-

ed that they provide counseling to households about their eligibility for Federal food assistance programs.

USDA is currently funding initiatives for emergency food providers to develop ways to help households access Federal food assistance programs. For example, food banks in Delaware and New York have developed methods to prescreen households for FSP eligibility and to assist them in the application process.

Patterns of Food Stamp and Food Pantry Use Over Time: Evidence from Kansas City, Missouri

ERS collaborated with the University of Missouri-Columbia to learn more about the patterns in household use of emergency food and the Food Stamp Program. The data used in the analysis covered a broader time frame than most studies of emergency food assistance, and did not rely on an emergency food user's ability to recall past use of emergency and Federal food assistance.

The research used a unique database to examine household use of food pantries between January 1998 and May 2001. Food pantries in the Kansas City metropolitan area recorded in the database the number and value of services they provided to households each month. The University of Missouri-Columbia and ERS researchers were able to link data on food pantry visits and food stamp use for the 85,258 households that used at least one of these forms of food assistance during the study period.

The researchers found that four times as many households used food stamps as used food pantries in a given month. And, food stamp households used food stamps more often than food pantry households used food pantries. Between January 1998 and May 2001, the average food stamp

Emergency food providers represent a connection to a population that may benefit from Federal food assistance.

household received benefits in 12 months, whereas the average food pantry household received aid in only 5 of the observed months and rarely in consecutive months.

The researchers also found that almost 60 percent of food pantry households also received food stamps some time during the period, implying that, for many food pantry households, food pantry use does not reflect a lack of access to the FSP.

On the other hand, roughly 40 percent of food pantry households did not receive food stamps at any time between January 1998 and May 2001. Would the households that relied only on food pantries have been better served by the FSP? The analysis indicated that these households averaged two visits to a food pantry over the 3½-year study. The greater flexibility and immediacy of food pantries allow them to meet these households' needs for sporadic, short-term food assistance, which may be difficult for the FSP to do.

The data from Kansas City also allowed food stamp households and their reliance on food pantries to be examined. Such an analysis is not possible with the national survey data because they include only a sample of emergency food users.

The extent to which food stamp recipients also rely on food pantries may provide some indication of the adequacy of food stamp benefits. The analysis found that almost two-thirds of food stamp households did not visit a food pantry at any time during the study period, implying that many food stamp households do not turn to food pantries as a way to supplement their food stamp benefits. And, the 37 percent of food stamp households that did use a food pantry, did not do so regularly. In almost any given month during the study, less than 10 percent of food stamp households supplemented their food stamp benefits by visiting a food pantry.

Emergency food providers play an important role in providing food assistance and also represent a connection to a population that may benefit from Federal food assistance. More attention to those who use emergency food and to their use of Federal food assistance can help ensure that the EFAS and Federal food assistance programs work together to most effectively reach those in need. **W**

This article is drawn from . . .

The Emergency Food Assistance System—Findings from the Client Survey: Executive Summary, by Ronette Briefel, Jonathan Jacobson, Nancy Clusen, Teresa Zavitsky, Miki Satake, Brittany Dawson, and Rhoda Cohen, FANRR-32, USDA/ERS, August 2003, available at: www.ers.usda.gov/publications/fanrr32/

"The Food Safety Net Since Welfare Reform: Use of Private and Public Food Assistance in the Kansas City Metropolitan Area," by Jane Mosley and Laura Tiehen, *Social Service Review* 79(2), June 2004.

The Emergency Food Assistance System—Findings from the Provider Survey, Volume I: Executive Summary, by James Ohls and Fazana Saleem-Ismail, FANRR16-1, USDA/ERS, October 2002, available at: www.ers.usda.gov/publications/fanrr16-1/

Have Conservation Compliance Incentives Reduced Soil Erosion?

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Tim McCabe, USDA/NRCS

Since its inception in the 1930s, U.S. agricultural policy has been designed to support farmers' incomes while promoting soil conservation practices. By the 1970s, however, policymakers recognized that existing farm price and income support programs were not always consistent with soil conservation efforts. An unintended effect of these programs was to encourage producers to maintain or expand production of relatively erosive crops, such as row crops (corn, cotton, soybeans), sometimes on highly erosion-prone soils. At the same time, the Government was helping farmers reduce soil erosion and related damages through conservation cost-sharing programs. Policymakers further recognized—aside from concerns about consistency—that farm program payments could be used as incentives to encourage better conservation behavior.

In the 1985 Food Security Act, policymakers required farmers to engage in conservation activities in order to receive government payments, in an effort to improve consistency among policy objectives while reducing soil erosion. These mechanisms apply to the just over 100 million acres of U.S. cropland—about 25 percent of all cropland—that are considered highly erodible land (HEL, see box, "Highly Erodible Land"). "Conservation compliance" requires producers to apply and maintain conservation systems on HEL cropland that was already in crop production in 1985 or risk losing farm income support, price support, and conservation payments from voluntary programs. "Sodbuster" requires similar (albeit more stringent) plans on HEL brought into crop production after 1985. (The 1985 Act also introduced a mechanism to preserve wetlands. See box, "Conservation of Wetlands.") This article focuses primarily on the effect of conservation compliance.

Following implementation of conservation compliance and other conservation

Highly Erodible Land

Highly erodible land has an erodibility index (EI) of 8 or larger. The erodibility index is the ratio of inherent erodibility to the soil loss tolerance. Inherent erodibility for a given soil is the rate of erosion (tons per acre per year) that would occur on land that was continuously clean tilled throughout the year. The soil loss tolerance, or T value, is an estimate of the rate of soil erosion that can occur on a given soil without significant long-term productivity loss. Thus, the erodibility index captures both the propensity of a soil to erode and the potential for damage from erosion. Land can be highly erodible based on potential for water-borne erosion, wind erosion, or both. Just over 100 million acres of U.S. cropland are highly erodible, about 25 percent of all cropland.



Lynn Betts, USDA/NRCS

policy changes, soil erosion on U.S. cropland was significantly reduced. Between 1982 and 1997, annual cropland soil erosion fell by almost 40 percent. Of course, farmers respond to a range of economic and policy stimuli, making it difficult to determine how much of the decline is the result of conservation compliance alone. Some reductions cannot be attributed to the compliance policy because they occurred on land not subject to conservation compliance. Even for land that is subject to compliance, there are questions about the role of conservation compliance in helping to achieve erosion reductions. Critics charge that weak conservation standards and inadequate enforcement have undermined conservation compliance. Moreover, other factors, such as changing technology, may also have played a role in achieving the observed reductions.

Given the range of economic and policy forces influencing farmers' production decisions, how much erosion reduction can be reasonably attributed to the national policy of conservation compliance? A careful analysis of relationships among erosion reduction data, compliance requirements, production trends and other factors that influence farmer behavior yields useful insights into possible answers.

Conservation Compliance: A Brief Primer

Conservation compliance requires the application of approved conservation systems on HEL cropland as a condition of eligibility for most farm commodity and conservation programs. A conservation system is a collection of conservation practices applied together. For example, a producer may adopt conservation tillage, shift to less erosive crops (also called "conservation cropping"), and install grass waterways to move water off fields. The effectiveness of conservation compliance in reducing soil erosion depends largely on

Conservation of Wetlands

In addition to conservation compliance and sodbuster, another mechanism was introduced in the Food Security Act of 1985 to encourage preservation of wetlands. Under "swampbuster," as this mechanism is known, producers who drain wetlands to produce crops can also lose farm program payments. Together, the mechanisms created in 1985 help ensure that U.S. farm support and farm conservation policies work together.

three factors: (1) conservation system design requirements, which determine conservation costs, (2) the strength of the compliance incentive, and (3) the level of enforcement effort.

Initially, USDA considered requiring that conservation systems reduce erosion to the soil loss tolerance ("T") level, an estimate of the rate of soil erosion that can occur on a given soil without significant long-term productivity loss. Before conservation compliance plans could be devised or implemented, however, USDA dropped the strict T standard. Unresolved questions about the scientific validity of the T value as well as increasing recognition of the importance of the damage that sediment from soil erosion can bring to adjacent water bodies prompted questions about the appropriateness of T as a basis for compliance requirements. USDA also determined that reducing erosion to T (or even twice the level of T, a higher rate of erosion) might be so costly that crop production would no longer be profitable on a great deal of highly erodible land.

Conservation tillage in Maryland.

Three conservation practices make up conservation systems used on more than 50 percent of highly erodible cropland, 1997

Conservation system	Highly erodible cropland subject to compliance
	Percent
Conservation cropping/crop residue use	27.5
Conservation cropping/conservation tillage	10.8
Conservation cropping only	7.8
Crop residue use only	4.9
Total	51.0

Source: ERS analysis of USDA compliance review data.

Ultimately, conservation compliance was implemented for all HEL land using a flexible approach that accounted for both soil erosion and the cost of erosion reduction, without imposing a fixed erosion standard. Where erosion can be reduced to the T level without making crop production unprofitable, producers are required to develop "basic" conservation plans, designed to reduce erosion to T. Where reducing erosion to T is more costly, producers are allowed to develop "alternative" conservation systems. Alternative conservation systems require the application of technically and economically feasible practices that result in "significant" erosion reduction. Under alternative systems, producers are not required to reduce erosion to any specific level.

In the end, most producers have been able to meet conservation compliance requirements by adopting relatively inexpensive management practices. Because HEL cropland varies widely in terms of soils, topography, climate, and cropping patterns, more than 1,600 conservation systems have been approved for use. However, more than 50 percent of acres with conservation systems in place have systems that are made up of one or more of just three conservation practices: conservation cropping, conservation tillage, and crop residue use.

The incentive for producers to meet conservation compliance requirements depends on the level of program benefits that can be withheld. Producers who fail to meet compliance requirements on HEL cropland may be denied benefits from most



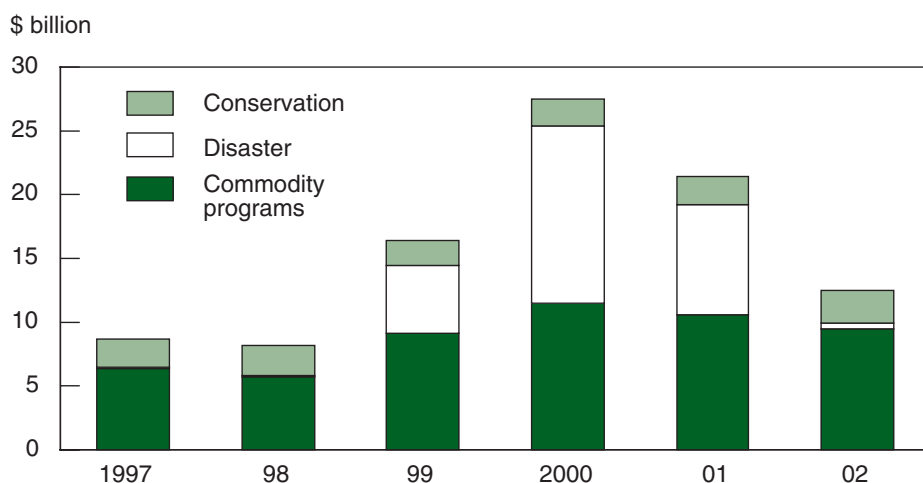
Tim McCabe, USDA

Federal agricultural programs on their whole farm—even if it includes non-HEL cropland. Ongoing commodity and disaster relief programs make up most of the direct payments subject to compliance. Conservation payments are also significant, including those provided under land retirement programs, such as the Conservation Reserve Program (CRP) and the Wetland Reserve Program (WRP), and conservation programs for working lands, such as the Environmental Quality Incentives Program (EQIP). Annual spending on these programs has ranged from about \$8 billion to more than \$27 billion in recent years.

Eligibility for Federal agriculture-related loans or loan guarantees (such as price support loans and farm credit loans) can also be denied, though this analysis does not address these particular incentives. Subsidized crop insurance, which could be withheld under the original compliance provisions enacted in 1985, was removed from the list of programs subject to compliance in the 1996 Federal Agricultural Investment and Reform (FAIR) Act.

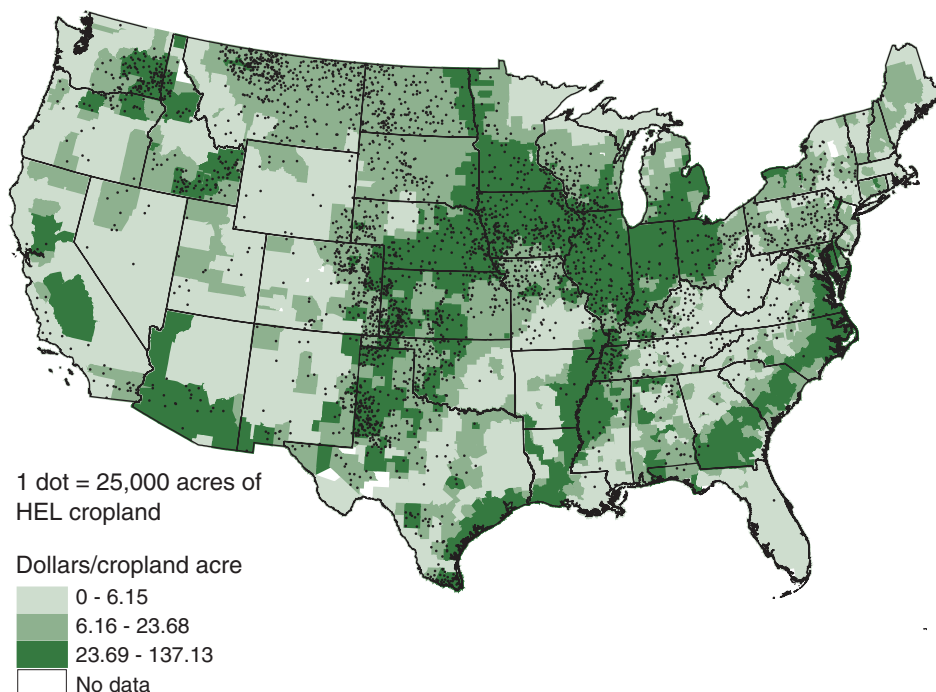
The effectiveness of conservation compliance depends critically on the geographic distribution of payments that could be denied, relative to the environmental problems addressed through compliance mechanisms. A comparison of 1998 commodity program payments—the lion's share of payments received by producers—with the geographic distribution of HEL cropland shows that most areas of the U.S. that have HEL cropland are receiving government payments. Although the overall level of commodity program payments fluctuates over time, the geographic distribution of these payments has been stable from year to year because the distribution of payments depends largely on the geographic distribution of program-eligible base acres, which depends, in turn, on historical plantings, not current crop acres.

Commodity, disaster relief, and conservation program payments can be withheld under conservation compliance



Source: USDA's Office of Budget and Policy Analysis.

Most of the areas that have highly erodible cropland received farm program payments in 1998



Sources: USDA's Farm Service Agency and 1997 National Resources Inventory.

In addition to financial incentives, enforcement also plays a role in the effectiveness of the compliance mechanisms. USDA's primary enforcement mechanism is the annual Compliance Status Review

(CSR). Each year, compliance status is assessed on a sample of "tracts" subject to conservation compliance requirements (and other compliance mechanisms). In 2001, for example, 17,723 tracts were

reviewed, including about 4.9 million acres. The CSR summary prepared by USDA's Natural Resources Conservation Service (NRCS) shows that 98.0 percent of reviewed tracts and 98.9 percent of reviewed acres were meeting compliance requirements.

A recent General Accounting Office (GAO) report, however, identified a variety of deficiencies in the CSR that, in their view, "make questionable USDA's claim that 98 percent of the Nation's cropland tracts subject to the conservation provisions are in compliance." GAO criticized the CSR on a number of issues, including methods used to select the sample for review, consistency and clarity of guidance provided to local offices, data handling and analysis, failure to cite producers for significant deficiencies, and inadequate justification for waiver of penalties.

A Systematic Estimation Is Needed

Because of the concerns raised by the GAO, we used other data and information on soil erosion, farm program payments, and program requirements to estimate the contribution of compliance to overall erosion reduction.

According to data from the National Resources Inventory (NRI), maintained by NRCS, overall (HEL and non-HEL) annual cropland erosion fell from 3.07 billion

tons in 1982 to about 1.90 billion tons in 1997, a reduction of 1.17 billion tons, or about 40 percent. Because conservation compliance was enacted in 1985 and producers were required to have conservation systems fully operational by 1995, the NRI provides estimates of cropland erosion "before" (1982) and "after" (1997) implementation of conservation compliance. Using this estimate of erosion reduction as a starting point, we systematically determined how much of that erosion is attributable to conservation compliance by examining several factors:

- To what extent did erosion reduction occur on HEL land?
- Did these erosion reductions result from specific actions that could have reasonably been required by or prompted by conservation compliance? Or could they have resulted from actions, such as changes in land use, that are not typically associated with conservation compliance?
- Did erosion decline on farms that received program payments and were subject to conservation compliance?

Of the 1.17-billion-ton drop in annual cropland soil erosion, 442 millions tons occurred on non-HEL cropland that was not subject to conservation compliance.

(Some non-HEL erosion reduction could be indirectly attributed to compliance if conservation systems were also adopted on non-HEL cropland within the complying farm. For example, conservation tillage may have reduced costs for some producers, prompting its use on non-HEL cropland as well.)

The balance of the reduction, 732 million tons, occurred on HEL cropland. But not all of this reduction can be attributed to conservation compliance, either. About 365 million tons—about 50 percent—of erosion reduction on HEL cropland occurred on land that was cropped in 1982 but not in 1997. This land use change, and its associated erosion reduction, was not likely to be the result of conservation compliance, as compliance focuses on implementing conservation systems that allow HEL cropland to stay in production.

HEL cropland that was cropped in both 1982 and 1997 accounts for 367 million tons of erosion reduction. For this cropland, conservation compliance applied only to "excess" erosion, or erosion in excess of the T level. "Nonexcess" erosion, or erosion reduction below the T level, cannot generally be attributed to compliance, though some conservation compliance systems may result in reduction of erosion to rates less than T. Of the 367 million tons, 36 million tons repre-

Topsoil as well as farm fertilizers and other potential pollutants run off unprotected farm fields when heavy rains occur.

Lynn Betts, USDA/NRCS

Estimating HEL and Erosion on Farms Receiving Payments

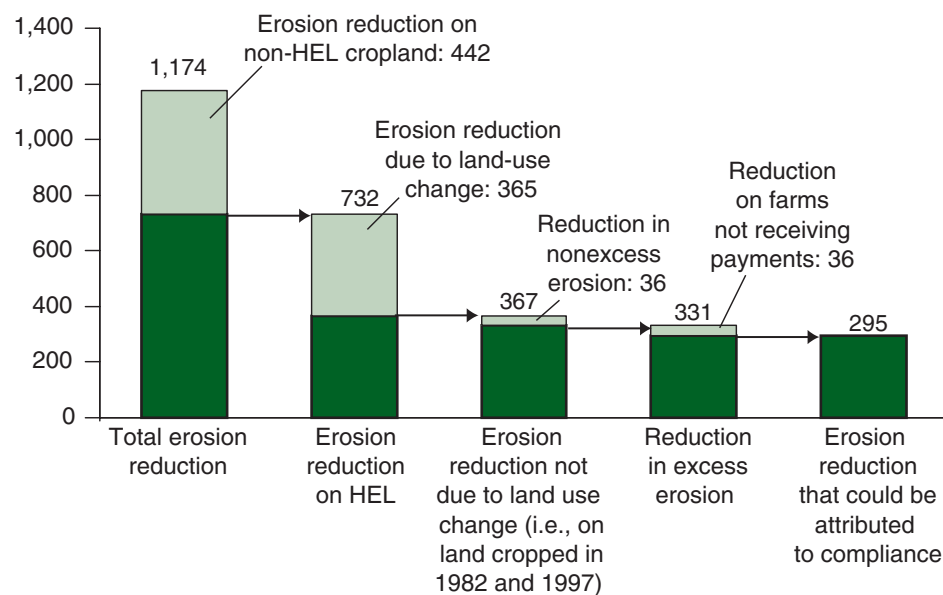
Data on erodibility and soil erosion from the National Resources Inventory (NRI), maintained by USDA's Natural Resources Conservation Service, were combined with ARMS data on crop acreage and government payments received to estimate the extent of HEL cropland and related erosion on farms receiving government payments and subject to conservation compliance. For the purpose of the analysis, government payments were defined as farm commodity program payments, disaster payments, and conservation payments from the Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP), and the Environmental Quality Incentives Program (EQIP). Payments from these commodity and conservation programs account for roughly 98 percent of direct payments subject to compliance mechanisms.



Jack Dykinga, USDA/NRCS

Erosion reduction from 1982 to 1997 has many components

Annual soil loss (million tons)



Source: ERS analysis of 1997 National Resources Inventory and 1997 Agricultural Resource Management Survey data.

sent reductions that were less than the T level, and, therefore, cannot be directly attributed to conservation compliance. Excluding the 36 million tons of nonexcess erosion leaves 331 million tons of reduction in excess erosion that could be attributed directly to conservation compliance *if* reductions occurred on the farm of a producer who participates in government programs subject to compliance *and* reductions would not have been realized without compliance.

Data from USDA's Agricultural Resource Management Survey (ARMS) indicate that 86 percent of all U.S. cropland is located on farms that receive government payments, indicating that a large proportion of HEL cropland is likely to be included in farms with government payments. NRI data on erodibility and soil erosion, along with ARMS data on farm operator participation in government programs, indicate that roughly 83 percent of HEL cropland, about 92 million acres, is located on farms that receive at least some

commodity program, disaster, or conservation payments.

While excess erosion has declined both on farms that receive government payments and on those that do not, erosion reductions appear to have been larger on farms that receive farm program payments. For wind erosion, the difference is large. Excess wind erosion declined by 30.7 percent on farms receiving payments, but by only 14.2 percent on farms not receiving payments. For water erosion, the difference is somewhat smaller. Excess water erosion dropped by 46.7 percent on farms receiving payments and by 40.5 percent on farms not receiving payments.

Overall, an estimated 295 million tons of erosion reduction per year could be directly attributed to implementation of conservation compliance policy. This amount is roughly 89 percent of the 331 million tons of excess erosion reduction on HEL cropped in 1982 and 1997 and 25 percent of all erosion reduction. (See box,



Jack Dykinga, USDA/NRCS

Soil scientist and farmer assess the effects of wind erosion, which can be reduced if conservation tillage is adopted.

"Estimating HEL and Erosion on Farms Receiving Payments.")

Finally, some erosion reduction that could be directly attributed to compliance may have occurred even without the compliance requirements. For example, conservation tillage can preserve soil moisture where rainfall is limited and can also reduce machinery, fuel, and labor costs, making it profitable for some producers, regardless of its effect of soil erosion. Tillage and planting machinery needed to practice conservation tillage became widely available only in the mid-

to late 1970s. Because widespread adoption of new practices often occurs over a long period of time, producers who included conservation tillage in compliance plans may have eventually adopted the practice for economic reasons even without the compliance requirement. Unfortunately, existing data provide little insight on this possibility.

Are Farmers Responding to Conservation Compliance Incentives?

We find considerable evidence to suggest that the answer is "yes." Highly erodible land is likely to be located on farms that receive Federal farm program payments. Between 1982 and 1997, excess erosion dropped sharply on these farms, and the reduction in erosion appears to have been larger on farms receiving payments than on farms not receiving payments, particularly on farms with wind-erodible soils. Overall, a significant share of erosion reduction between 1982 and 1997 is likely to have occurred on land directly subject to conservation compliance requirements.

On the other hand, NRI data show that soil erosion was sharply reduced on all types of land, including land not subject to compliance requirements. Moreover, the difference in reduction of water-caused erosion between farms

receiving payments and farms not receiving payments is small.

These results are consistent with more than one hypothesis about the role of conservation compliance in reducing soil erosion. Compliance could have led farmers to apply inexpensive practices on HEL that quickly spread to other land types once their value was demonstrated. Such could be the case with practices like conservation tillage or crop residue use, to the extent that these practices reduce costs or conserve moisture in areas that receive limited rainfall. Changes in cropping practices on HEL cropland may have subsequently prompted changes in production practices on non-HEL cropping in the same farm.

One could also argue that practices like conservation tillage would eventually have been adopted where they are cost effective regardless of conservation compliance. In other words, the compliance requirement happened to coincide with a period during which better equipment became available, making conservation tillage practices much easier to implement. Even if these practices eventually would have been adopted, however, it is not clear that the same level of erosion reduction would have occurred between 1982 and 1997. The compliance requirement, structured to focus on inexpensive practices, may have accelerated the adoption process on all types of land. **W**

This article is drawn from . . .

Environmental Compliance in U.S. Agricultural Policy: Past Performance and Future Potential, by Roger Claassen, AER-832, USDA/ERS, June 2004, available at: www.ers.usda.gov/publications/aer832/



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Rural Hispanics Employment and Residential Trends

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Hispanics are the largest and fastest growing minority group in the U.S. Until now, their presence has been mostly an urban phenomenon, as roughly 90 percent of all Hispanics reside in metropolitan (metro) areas. For the first time, however, the nonmetro Hispanic population is increasing in number throughout many rural regions of the Nation. This new demographic pattern is the result of changes in immigration laws and stricter border crossing enforcement during the 1990s, which induced many Hispanic immigrants to extend their stays in the U.S.

Hispanic population growth and settlement have had visible economic and social effects on rural areas and small towns and have garnered considerable media and public policy attention. Many rural communities have sought ways to integrate their newest residents. What does the presence of a growing population of low-income minority residents mean for the social, economic, and political future of rural America?

Rapid Growth and Geographic Expansion

During the 1990s, nonmetro Hispanic population growth more than doubled from the previous decade and far outpaced that of all other nonmetro residents. Hispanics made up less than 5 percent of nonmetro residents in 1990, but they accounted for over 25 percent of all nonmetro population growth from 1990 to 2000. Despite their concentration in the Southwest, half of all nonmetro Hispanics now live outside the Southwest. Moreover, rural Hispanics in the Midwest, Southeast, and Northwest, though small in number, are growing far more rapidly than all other racial and ethnic groups.

During the 1990s, Hispanic settlement became more dispersed throughout nonmetro America. Over 90 percent (2,155 counties) of all nonmetro counties experienced some Hispanic population growth, in sharp contrast to the 710 nonmetro counties (31 percent) that experienced non-Hispanic population decline during the decade. This moderate but widespread growth ameliorated some of the chronic population decline resulting from natural decrease (more deaths than births) and outmigration from rural counties throughout the Midwest and Great Plains. In fact, Hispanic population growth in the 1990s prevented net population loss in over 100 nonmetro counties.



Ken Hammond, USDA

During the 1990s, nonmetro and metro Hispanic populations grew far more rapidly than non-Hispanic populations

County type	Counties	Hispanic		Non-Hispanic	
		Population, 2000	Change in population, 1990-2000	Population, 2000	Change in population, 1990-2000
	Number	Number	Percent	Number	Percent
Nonmetro counties	2,289	3,175,953	67	52,983,373	8
High-growth Hispanic	149	526,942	345	7,254,164	15
Established Hispanic	230	1,602,630	32	2,931,071	9
All other	1,913	1,046,381	84	42,798,138	7
Metro counties	813	32,129,864	57	193,132,712	9

Source: Calculated by ERS using data from the U.S. Census Bureau.

County definitions

Nonmetro—Counties not defined as metro:

High-growth Hispanic—Hispanic population growth of 150 percent or higher + Hispanic population of 1,000 or more in 2000

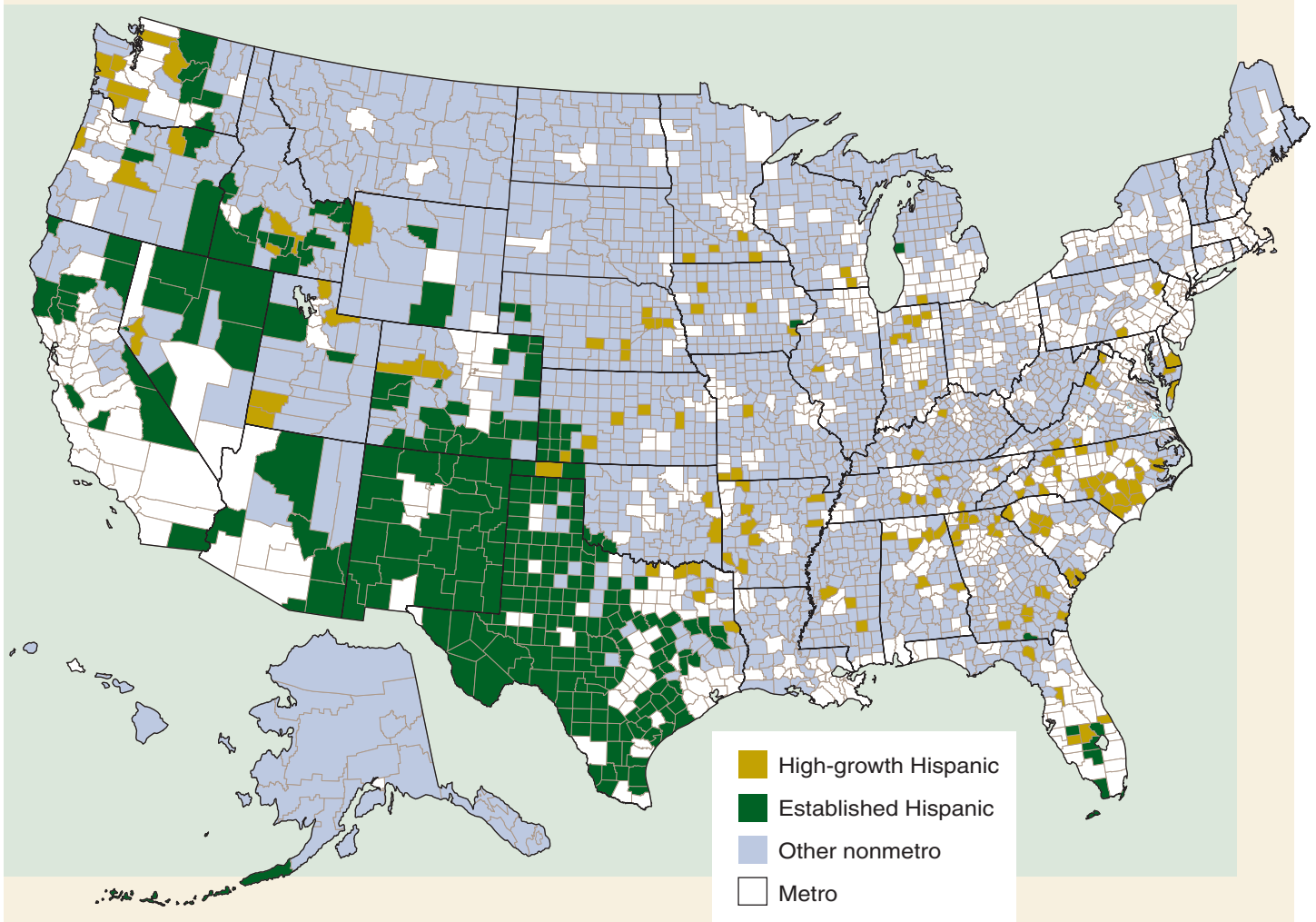
Established Hispanic—Hispanic population of 10 percent or higher in 1990.

All other—All other nonmetro counties.

Metro—Counties with a city of 50,000 or more and contiguous counties with high commuting to the core county.

A second and simultaneous pattern of Hispanic population growth and settlement in the 1990s was one of concentration in a relatively few predominantly Hispanic nonmetro counties. Counties with high Hispanic population growth often have manufacturing plants that employ large numbers of low-skilled workers. Such industries tend to be less prominent in other nonmetro counties or in counties with established Hispanic populations. In addition, sociodemographic characteristics of residents of these high-growth counties vary greatly, and thus influence personal earnings and residential settlement. Hispanics in these counties are more likely to have arrived recently in the United States and to be less educated, less proficient in English, and undocumented—characteristics that inhibit economic and social integration—than their non-Hispanic neighbors or Hispanics elsewhere.

As of 2000, established Hispanic counties remained concentrated in the Southwest, while counties with rapid Hispanic population growth were scattered throughout the Nation



Source: Calculated by ERS using data from the U.S. Census Bureau.

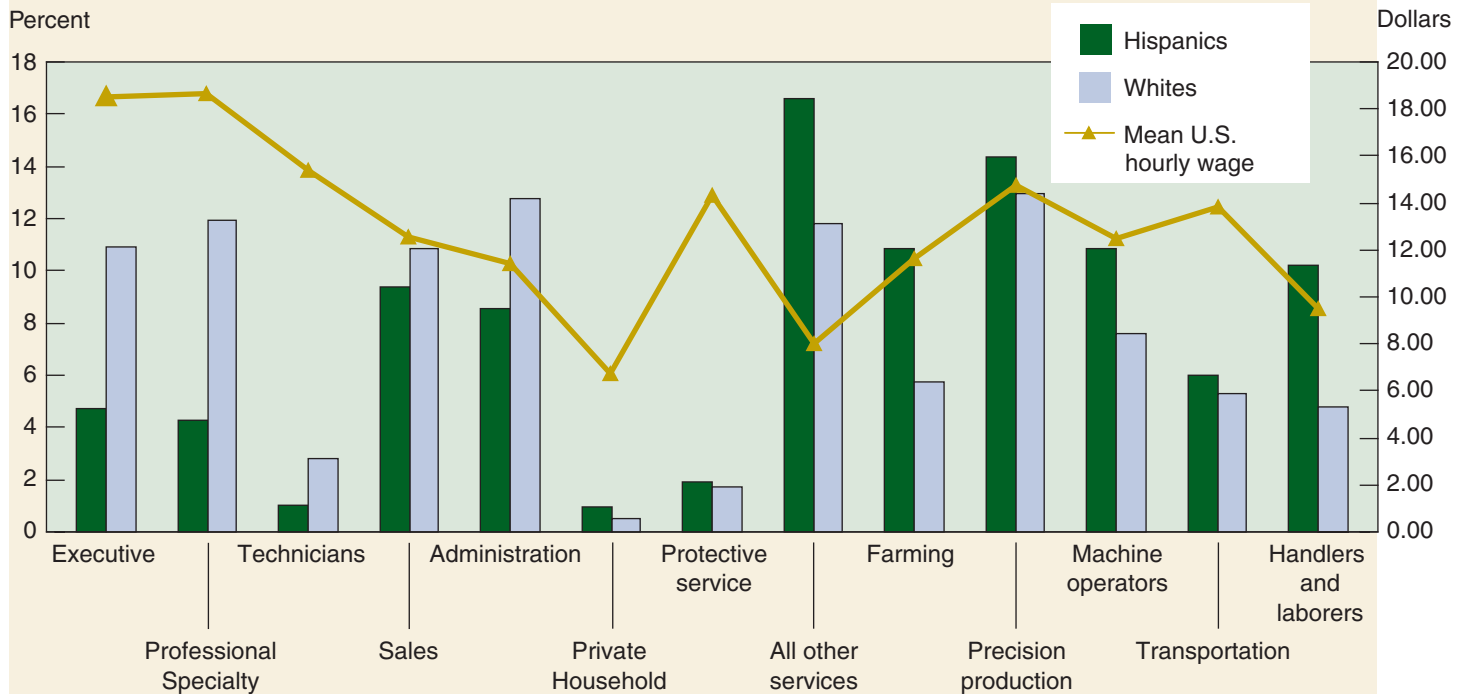
More Rural Hispanics in Low-Wage Jobs

Although Hispanic employment in high-growth nonmetro counties is still concentrated in agricultural work, recent data show occupational diversity and mobility. Hispanics in many nonmetro counties are often employed in large numbers in specific rural industries, such as textile manufacturing jobs in Georgia and poultry processing jobs throughout the Southeast. Nonmetro Hispanics make up the majority of farmworkers, but the share

of nonmetro Hispanics employed in agricultural industries fell from 17 percent in 1990 to about 11 percent in 2000. In contrast, the share of nonmetro Hispanics in sales, services, and manufacturing occupations increased over the decade. By 2000, 17 percent of nonmetro Hispanics were employed in general service jobs, 14 percent in precision production jobs, 11 percent as machine operators, 11 percent as farmworkers, and 10 percent as handlers, equipment cleaners, helpers, and laborers.

The prevalence of rural Hispanics in low-wage jobs is linked to their educational levels. During the 1990s, wage growth was highest for college-educated workers and lowest for the least educated. Rural Hispanics were the only rural ethnic group whose average level of educational attainment did not change in the 1990s largely due to historically high rates of immigration during the period and, thus, a larger share of Hispanics with low educational levels. By 2000, the share of rural Hispanics without a high school degree

Nonmetro Hispanics were more likely to be concentrated in lower skilled and lower paid occupations than nonmetro Whites, 2000



Source: Calculated by ERS using data from the U.S. Census Bureau.

The nonmetro Hispanic population is increasing throughout many rural regions of the Nation.

remained at 49 percent, compared with 17 percent for non-Hispanic Whites and 36 percent for Blacks.

Despite greater participation in service and manufacturing jobs, rural Hispanic earnings grew only slightly in the 1990s. Annual earnings of rural Hispanics increased during the 1990s slightly more rapidly than the earnings of higher paid Whites. In 2000, average annual earnings were \$23,900 for rural non-Hispanic Whites and \$18,400 for rural Hispanics. Hourly wages increased for both Hispanics and Whites, but because wages increased at roughly the same rate, large differences remained between the two groups.

Lower earnings for some rural Hispanics translate into poverty rates comparable with those of rural Blacks—and significantly higher than those of rural non-Hispanic Whites. Although poverty rates for Hispanics and Blacks declined

sharply during the 1990s, one-fourth of rural Hispanics remained below the poverty line in 2000. In new nonmetro destinations, Hispanics are more likely to reside in isolated low-income areas. The integration of Hispanics into the rural economy presents challenges as well as opportunities to revitalize rural communities that have been losing population.

Hispanic Population Growth Influences Rural Employers' Demand for Labor

The influx of a less educated and less skilled minority group into rural communities raises questions about how the integration of this group affects wages and employment. By examining the forces at work of both labor supply and demand, ERS researchers found that changes in the magnitude and skill level of labor demanded by employers—caused by both broad



Ken Hammond, USDA

economic trends and Hispanic migration into rural areas—had varying effects on wages in rural areas during the 1990s.

Due to a growing economy and industrial restructuring in the 1990s, employers in rural America generally demanded more skilled workers (with a high school education) than unskilled workers (who have not completed high school). This increased demand substantially increased the wages of skilled workers, especially for males. In a small subset of rural industries—services and manufacturing—however, changes in labor demand increased the wages of unskilled workers and, to a lesser extent, professional workers (college-educated), relative to the wages of skilled workers.

The effects of rural Hispanic population growth on wages were largely driven by employers' responses to the new entrants into the labor force and the subsequent altering of production to match available skills. ERS results suggest that, overall, some rural service and manufacturing industries hired unskilled Hispanic



Bob Nichols, USDA

During the 1990s, Hispanic settlement became more dispersed throughout nonmetro America.

labor as substitutes for skilled labor, but that the effect on wages was dwarfed by the larger increase in total demand for skilled labor in most rural industries. Although the availability of large numbers of rural Hispanic workers changed the nature of jobs demanded in the 1990s, a greater demand for skilled workers in the rural workforce increased their wages.

Residential Integration

Recent ERS research examined the extent of residential integration (the degree to which two population groups are evenly distributed throughout a given area) between nonmetro Hispanics and non-Hispanic Whites. To examine patterns of residential settlement and separation between Hispanics and non-Hispanics, ERS created a typology of county types based on Hispanic population growth and composition between 1990 and 2000. Three nonmetro county types were identified: (1) *high-growth Hispanic counties*, encompassing many new rural Hispanic destinations, (2) *established Hispanic counties*, and (3) *other nonmetro counties*. These county types were compared with each other as well as with metro counties. ERS then analyzed residential separation between Hispanics and non-Hispanic Whites at three geographic levels: county level, place level, and neighborhood level (census tracts).

Regardless of county type, Hispanics became more geographically integrated among non-Hispanic Whites throughout the Nation over the course of the past decade. Despite evidence of Whites moving out of some high-growth Hispanic counties, especially in the Midwest, the



Ken Hammond, USDA

White population in these counties generally grew twice as much as in other nonmetro counties. The Hispanic population was least dispersed in other nonmetro counties (accounting for 84 percent of all nonmetro counties). These counties also experienced the greatest decline in residential separation, a trend portending significant ethnic and social change. Rural America, except for nonmetro counties in the Southwest, has been predominantly non-Hispanic White, without much consistent contact with foreign-born people from countries outside of Europe. With increased Hispanic dispersion in nonmetro areas, interaction between non-

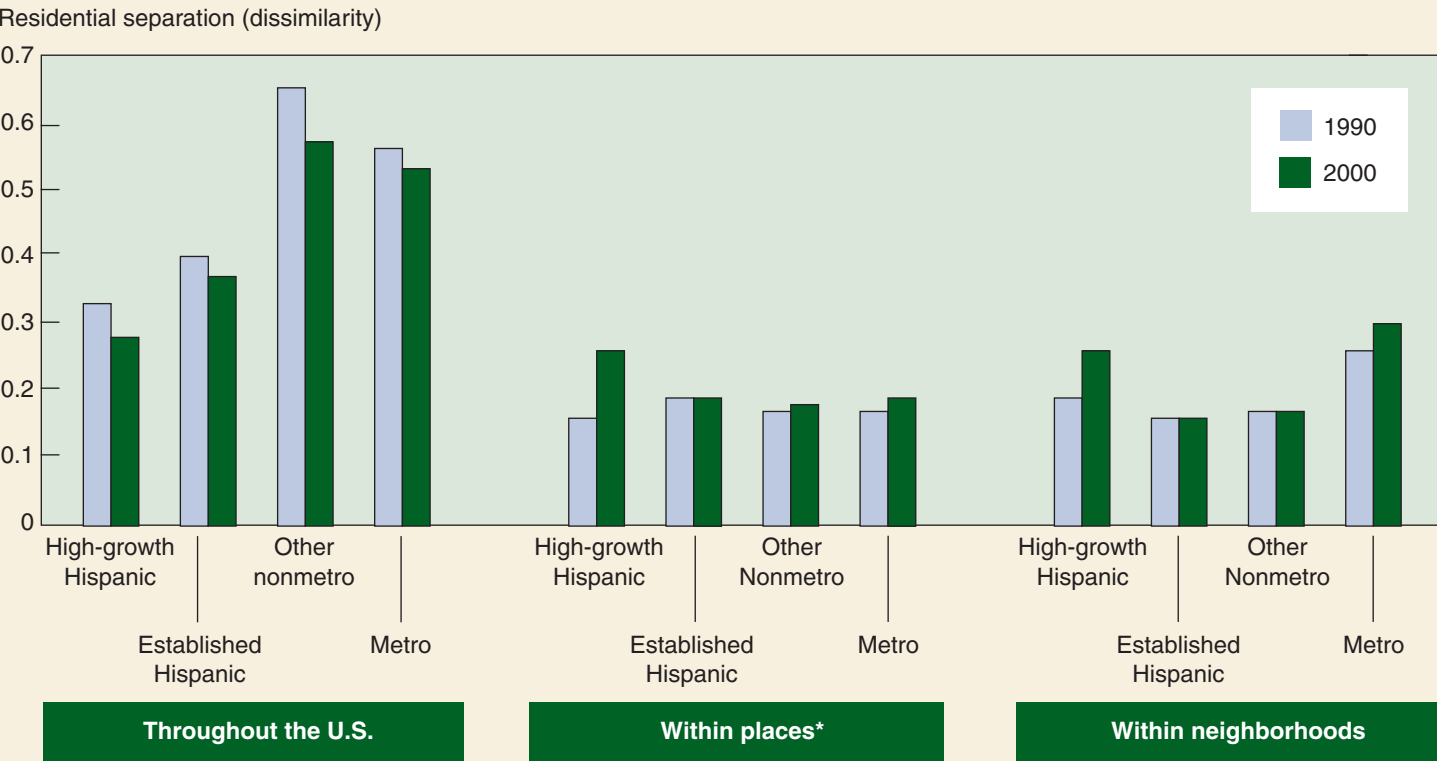
metro Whites and Hispanics is expected to continue, and rural areas could experience patterns of ethnic incorporation and diversity more typical of metro areas.

Within counties, however, a reversal of the national trend of Hispanic integration is found in the degree to which Hispanics and non-Hispanic Whites live together within town and city boundaries. High-growth Hispanic counties, which exhibited the lowest average level of residential separation among all county types in 1990, had the highest average level in 2000. This trend implies that, on average, Hispanics living in these 149 counties were about two-thirds more likely to be

spatially isolated from non-Hispanic Whites across municipal boundaries in 2000 than in 1990. The increase in residential separation in these counties contrasts significantly with that of established Hispanic counties and other nonmetro counties, both of which remained stable.

Nonmetro Hispanics, like nonmetro Blacks, tended to live in larger towns and cities between 1970 and 1990, while non-Hispanic Whites concentrated outside of census-defined places. During the 1990s, this trend actually increased. Municipal boundaries often represent economic, social, and fiscal dividing lines between groups and may heavily influence avail-

In 2000, Hispanics were more dispersed throughout the U.S., but residential separation from non-Hispanic Whites still increased within places and neighborhoods



Note: Dissimilarity measures distributional evenness between two groups and is computed using a standard formula that takes into account the populations of the two comparison groups for both the large and smaller areas examined. The value ranges from zero to one, with higher values indicating greater residential separation.

*A place is either legally incorporated under the laws of its State, or a statistical equivalent that the Census Bureau treats as a census-designated place.

Source: Calculated by ERS using data from the U.S. Census Bureau.



Ken Hammond, USDA

ability of social services, opportunity for economic development, property values, and local taxes. As suggested by the experience of nonmetro Blacks, who migrated to nonmetro towns and cities after World War II, nonmetro Hispanics may continue to gravitate to more densely settled locales to seek similar social, economic, and political resources within incorporated places. Yet the influx of Hispanics into densely settled areas sometimes occurs simultaneously with the exodus of non-Hispanic Whites from those same places.

Several reasons lie behind these residential patterns, one of which is economic. In high-growth Hispanic counties, non-Hispanic Whites have significantly higher average incomes than Hispanics, allowing them to purchase newer, larger houses and properties outside of towns and small cities that traditionally have been densely settled. Hispanics in high-growth Hispanic counties, with less time in the U.S. than other Hispanics and relatively lower earning power, are more likely to live with or

near relatives and friends in more crowded conditions until they can afford their own housing.

At the neighborhood level (census tract), residential separation between Hispanics and non-Hispanic Whites also increased during the 1990s, with dissimilarity indices comparable to those of urban neighborhoods. High-growth Hispanic counties exhibited the largest increases in residential separation, as well as the highest absolute levels, despite higher than average White population growth. For established and other nonmetro counties, average levels of residential separation remained unchanged during the decade.

Future Directions

Recent Hispanic residential settlement is a paradox. Hispanic population growth has helped to stem decades of population decline in some States. These communities increasingly have new demographic characteristics (young families with children) and economic vigor as well as social and cultural diversity. Yet,

many rural communities are unprepared for significant numbers of culturally different low-paid newcomers who seek inexpensive housing, require particular social services, and struggle to speak English. While Hispanics in new destinations often take low-paying jobs, their presence in the rural labor market may depress local wage rates in certain industries.

While socioeconomic status often improves for second- and third-generation Hispanics, rural communities face immediate needs to address the social, economic, and civic incorporation of recent Hispanic residents. Such integration is particularly important given that Hispanics have now become the Nation's largest and fastest growing minority group, with new arrivals increasingly populating nonmetro counties. Many local communities and States have designed programs to help new residents acquire information about public services and civic responsibilities. As U.S.-born Hispanic children continue to make up a significant and growing portion of future employees, taxpayers, and citizens, integration has become a crucial issue. **W**

This article is drawn from . . .

New Patterns of Hispanic Settlement in Rural America, by William Kandel and John Cromartie, RDRR-99, USDA/ERS, May 2004, available at: www.ers.usda.gov/publications/rdr99/

Impacts of Hispanic Population Growth on Rural Wages, by Constance Newman, AER-826, USDA/ERS, September 2003, available at: www.ers.usda.gov/publications/aer826/

See also the ERS Briefing Room on Race and Ethnicity in Rural America at: www.ers.usda.gov/briefing/raceandethnic/

Data may have been updated since publication. For the most current information, see www.ers.usda.gov/publications/agoutlook/aotables/.

Farm, Rural, and Natural Resources Indicators

	1990	1995	2000	2001	2002	2003	Annual percent change		
							1990-2000	2001-02	2002-03
Cash receipts (\$ billion)	169.5	188.0	192.0	199.8	192.9	212.4f	1.3	-3.5	10.1
Crops	80.3	100.8	92.4	93.4	99.5	106.7f	1.4	6.5	7.2
Livestock	89.2	87.2	99.5	106.4	93.5	105.6f	1.1	-12.1	12.9
Direct government payments (\$ billion)	9.3	7.3	22.9	20.7	11.0	17.4f	9.4	-46.9	58.2
Gross cash income (\$ billion)	186.9	205.9	228.6	235.3	219.4	244.9f	2.0	-6.8	11.6
Net cash income (\$ billion)	52.7	52.5	56.5	59.2	49.1	63.0f	0.7	-17.1	28.3
Net value added (\$ billion)	80.8	74.8	92.0	94.2	76.9	98.9f	1.3	-18.4	28.6
Farm equity (\$ billion)	702.6	815.0	1,025.6	1,070.1	1,110.7f	1,160.5f	3.9	3.8	4.5
Farm debt-asset ratio	16.4	15.6	14.8	14.8	14.8f	14.7f	-1.0	0.0	-0.7
Farm household income (\$/farm household)	38,237	44,392	61,947	64,117 p	65,757 p	67,453 f	4.9	2.6	2.6
Farm household income relative to average U.S. household income (%)	103.1	98.8	108.6	110.2	113.7	na	0.5	na	na
Nonmetro-Metro difference in poverty rate (%)	3.6	2.2	2.6	3.1	2.6	na	-3.2	-16.1	na
Cropland harvested (million acres)	310	302	314	311	307	314 p	0.1	-1.3	2.3
USDA conservation program expenditures (\$ bil.) ¹	3.0	3.5	3.4	3.7	3.5 q	na	1.3	-5.4	na

Food and Fiber Sector Indicators

U.S. gross domestic product (\$ billion current) ²	5,803	7,401	9,825	10,082	10,446	10,863 f	5.4	3.6	4.0
Food and fiber share (%)	15.1	14.2	12.6	12.3	na	na	-1.8	na	na
Farm sector share (%)	1.4	1.0	0.8	0.8	0.8	na	-5.4	0.0	na
Total agricultural imports (\$ billion) ¹	22.7	29.8	38.9	39.0	41.0	45.7	5.5	5.1	11.5
Total agricultural exports (\$ billion) ¹	40.3	54.6	50.7	52.7	53.3	56.2	2.3	1.1	5.4
Export share of the volume of U.S. agricultural production (%)	27.1	24.5	22.8	22.9	22.5	21.1 p	-1.7	-1.7	-6.2
CPI for food (1982-84=100)	132.4	148.4	167.9	173.1	176.2	180.0	2.4	1.8	2.2
Share of U.S. disposable income spent on food (%)	11.2	10.6	10.2	10.2	10.1	na	-0.9	-1.0	na
Share of total food expenditures for at-home consumption (%)	55.4	53.9	53.3	53.8	53.9 p	na	-0.4	0.2	na
Farm-to-retail price spread (1982-84=100)	144.5	174.5	210.3	215.4	221.2	na	3.8	2.7	na
Total USDA food and nutrition assistance spending (\$ billion) ¹	24.9	37.9	32.6	34.2	38.0	na	2.7	11.1	na

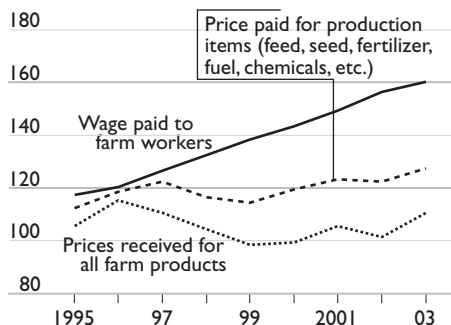
f = Forecast. p = Preliminary. q = 2002 Administration request. na = Not available.

¹ Based on October-September fiscal years ending with year indicated.

² Forecast for 2003 based on the Office of Management and Budget's Midsession Budget Review, July 2003.

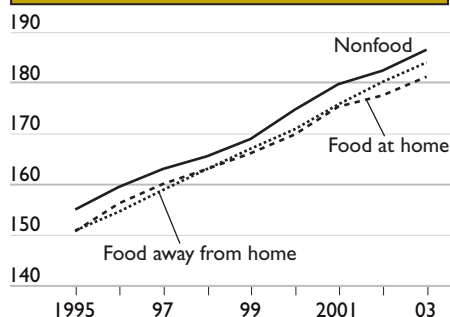
Prices paid and received by farmers

1990-92=100

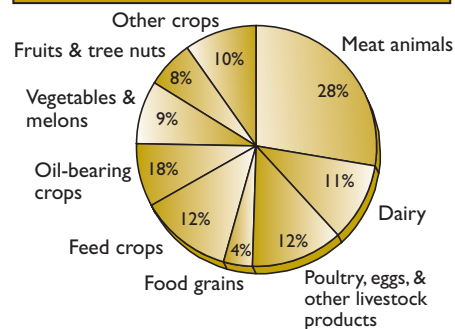


Consumer price indexes for food and nonfood items

1990-92=100



Cash receipts from farming in 2003 (forecast)



Behind the Data

Meat Price Spreads

Changing consumer preferences drive changes in food selections at the grocery store, and, in turn, changes in the services needed to transform raw agricultural commodities into finished retail food products. As consumers demand more convenience, for example, processing and marketing firms prepare and package their products accordingly. Farm-to-retail price spreads—the difference between the price consumers pay for a retail food product and the value of the farm ingredients used in that product—provide an economic measurement of these adjustments and help to gauge the competitiveness of individual food markets.

ERS's Food and Rural Economics Division computes price spreads for 9 commodity categories and 40 specific foods. These spreads are calculated for food consumed at home, and calculations are based on the Consumer Price Index. See "Behind the Data," *Amber Waves*, February 2004, Volume 2, Issue 1.

The Market and Trade Economics Division calculates meat price spreads for beef and pork. Unlike food price spreads, meat price spreads are based on a set of fixed retail products. These price spreads measure price changes—between farm and wholesale and wholesale and retail—and do not

reflect changes in the kinds of products that consumers demand.

- Calculation of meat price spreads begins with a standard animal and an assumption that it is cut up in a fixed way at the packing plant and distributed in a standard way at the grocery store. In this way, the total value of the animal at the farm can be compared with the total value of the animal at wholesale and retail.
- Starting with the retail values of meat (obtained from the Bureau of Labor Statistics), the gross farm values of the animals are calculated by applying conversion factors to the retail values of the meat. It takes 2.40 pounds of the standard steer to produce a pound of retail beef. For hogs, 1.869 pounds of the live animal translate to a pound of retail pork.
- In addition to their meat, cattle and hogs yield byproducts when they are slaughtered, such as organs, bones, and hides/skins. The byproduct allowance is the estimated wholesale value of the byproducts. The byproduct value is subtracted from the gross farm value of the animal to measure the net farm

value of an animal's meat, but it is not included in the retail price.

Food price spreads calculated by ERS are highly variable, affected by changes in both food prices and the amount and kind of services that consumers buy with their foods. Even with fixed farm and retail prices, marketing margins or spreads will increase if consumers shift toward more processed products. Spreads can also increase if costs of food marketing increase, either due to more expensive inputs or declining productivity in food marketing. Total grocery store productivity has declined over time, and this decline explains part of the widening price spreads for beef, pork, and chicken.

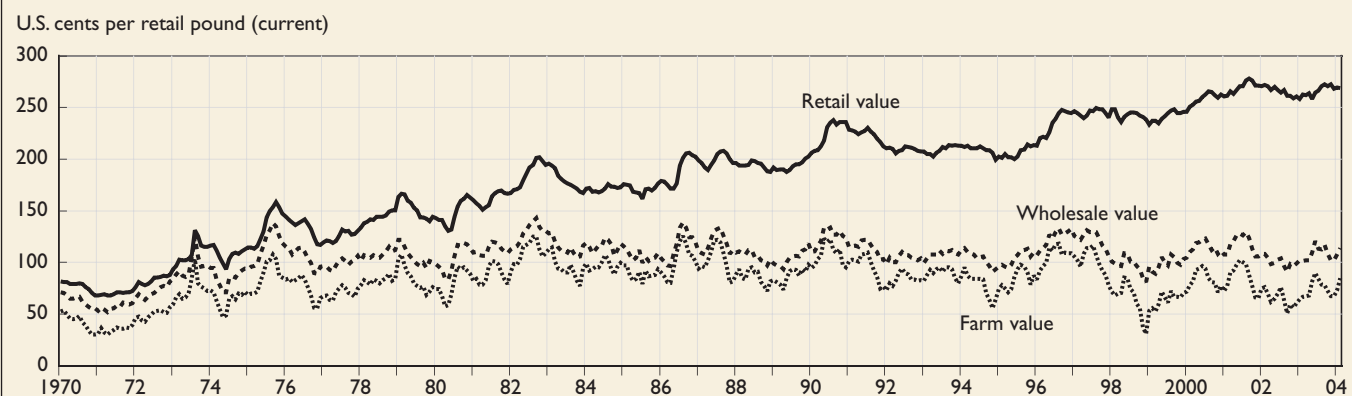
William Hahn, whahn@ers.usda.gov

For more information, visit . . .

Beef and Pork Values and Price Spreads Explained, by William Hahn, LDP-M-118-01, USDA/ERS, May 2004, available at: www.ers.usda.gov/publications/ldp/apr04/ldpm11801/

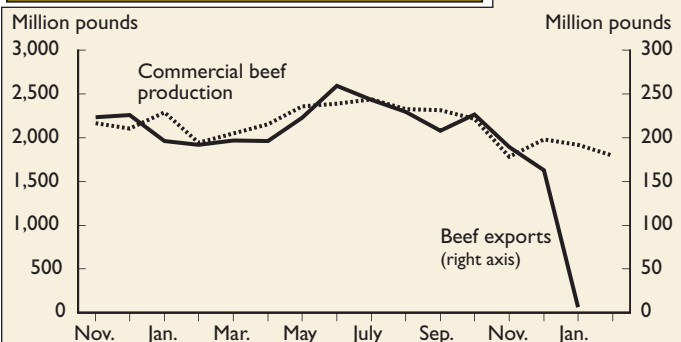
The Meat Price Spreads chapter of the ERS Briefing Room on Food Marketing and Price Spreads, www.ers.usda.gov/briefing/foodpricespreads/meatpricespreads/

The wholesale-retail price spread for pork is widening as declining productivity of grocery stores brings higher marketing costs, Jan. 1970-Feb. 2004

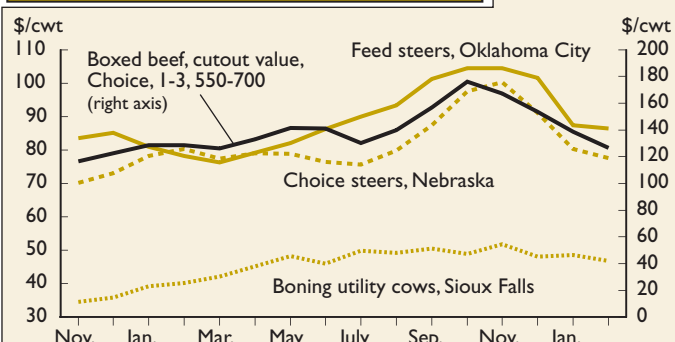


Markets and Trade

Beef exports plummeted after USDA announced the first case of BSE in the United States, Nov. 2002-Feb. 2004



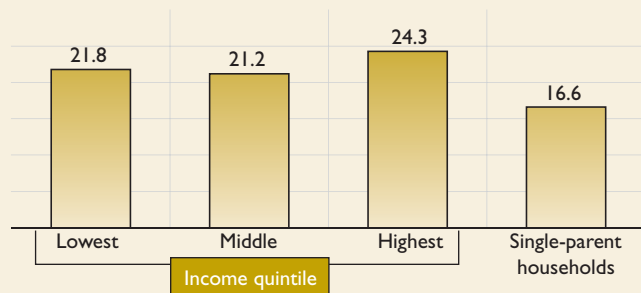
Meanwhile, beef prices are below October's record highs, but still above levels of a year ago, Nov. 2002-Feb. 2004



Diet and Health

Single-parent households spend the least per capita on fruits and vegetables eaten at home ...

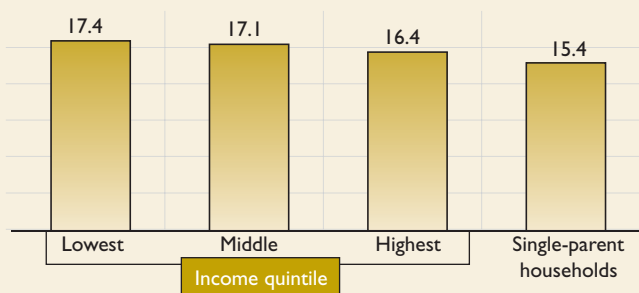
Yearly per capita fruit and vegetable expenditures (\$)



Source: Based on Bureau of Labor Statistics' 2001 Consumer Expenditure Survey.

... and have the lowest budget share for fruits and vegetables

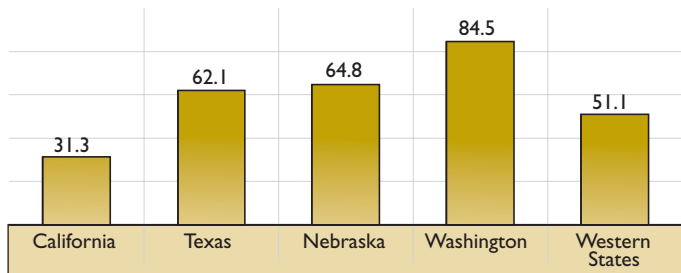
Percent of at-home food budget spent on fruits and vegetables



Natural Resources and Environment

About half of the irrigated acres in the 17 Western States use pressure (sprinkler and drip/trickle) systems, which are generally more efficient than traditional gravity-fed systems, but this percentage varies by State

Percent of irrigated acres with pressure systems

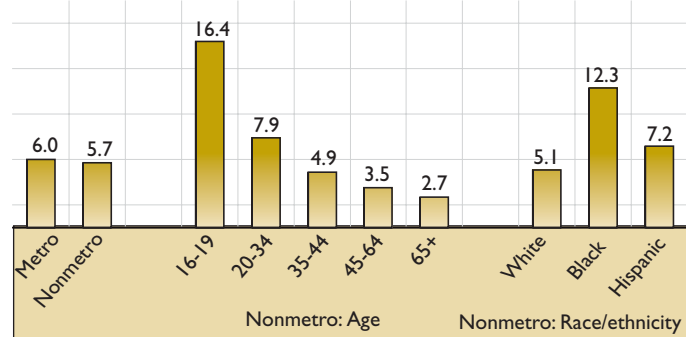


Source: Calculated by the Economic Research Service using data from USDA's 1998 Farm & Ranch Irrigation Survey

Rural America

Nonmetro unemployment is highest among minorities and youth, 2003

Percent unemployed



Source: Calculated by the ERS using data from Current Population Survey.

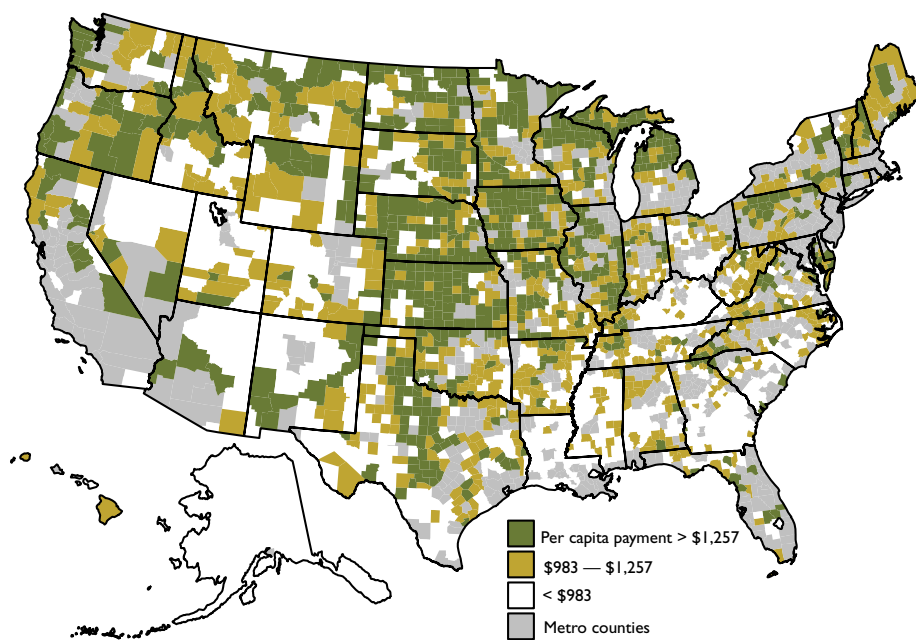
On the Map

Social Security retirement payments.

Social Security is the largest Federal program, with gross payments of about \$280 billion in 2001. Nonmetro areas received higher per capita payments than metro areas (\$1,098 versus \$955), with the highest payment levels concentrated in the farming-intensive central portion of the country.

Richard Reeder,
rreeder@ers.usda.gov

Social Security retirement payments, by county, fiscal year 2001



Source: ERS calculations using data from the Census Bureau.

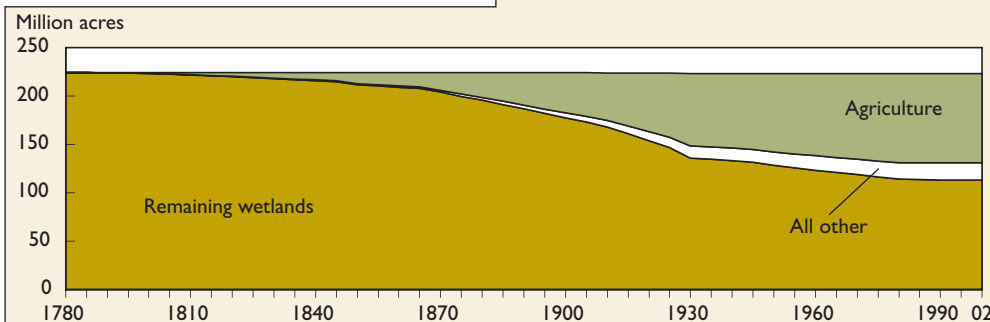
In the Long Run

Wetland losses. Until well into the 20th century, conversion of wetlands to agricultural and other uses was encouraged by policy incentives for drainage and westward expansion. Starting in the 1930s, conservation laws began to slow wetland conversion, and this momentum was reinforced by other measures over the last 30 years. Today, about half of the original wetlands area in the 48 contiguous States has been converted to other uses, mostly agriculture, but urbanization and other uses now account for most wetland conversion. Currently, the rate of net wetland loss from agriculture has been reduced to almost zero.

The current inventory of U.S. wetlands has been influenced by key legal and economic milestones.

- The Swamp Land Acts of 1849 and 1850
- The Homestead Act of 1862
- The Migratory Bird Hunting Stamp Act of 1934
- The Water Bank Program, 1970
- The Clean Water Act of 1972 plus later amendments
- Swampbuster provisions, 1985
- Reduced tax incentives for wetland drainage, 1986
- Wetland Reserve Program, 1990

Roger Claassen,
claassen@ers.usda.gov

Wetland losses, 1780-2002

Source: ERS analysis of data from "Status and Trends of Wetlands in the Conterminous United States: 1986-1997" (U.S. Department of the Interior's Fish and Wildlife Service) and from 2002 National Resources Inventory (USDA's Natural Resources Conservation Service).

Activities

Measuring Food Insecurity and Hunger

In March 2004, with ERS support, the Committee on National Statistics of the National Research Council (the operating arm of the National Academy of Sciences) convened an expert panel to review USDA's methods for measuring food insecurity and hunger in the U.S. population. It has been 10 years since the USDA's measures were developed. A substantial body of survey data has been collected and used to conduct research on food security and hunger. The panel will review current methods and procedures and consider recommendations to enhance these methods for monitoring, evaluation, and related research purposes. Staff from ERS, USDA's Food and Nutrition Service, and the Office of Management and Budget provided background information to the panel at its initial meeting in Washington, DC. **Mark Nord**, marknord@ers.usda.gov

The Role of Homeownership in Wealth Accumulation by Rural Households

As part of ERS's research program on the economics of rural housing, ERS and Kansas State University are examining rural-urban differences in household mortgage affordability, home equity, and net wealth accumulation over time. Homeownership is an important means to generate wealth. The extent to which owning a home generates accumulated wealth depends on the home's value, holding period, rate of appreciation, and the household's consumption of accumulated home equity. Preliminary results show that, compared with urban households, rural households have on average about 25 percent less net worth, their homes are worth half as much, and equity in those homes is 40 percent lower. These and other findings will be useful to USDA's Rural Housing Service in their efforts to develop effective single-family housing assistance programs for low-income rural residents. **James Mikesell**, mikesell@ers.usda.gov

How Do Households, Sectors, and Countries Adjust to Policy Change?

In the United States and other countries, adjustment and change in the farm sector and rural economy is an ongoing process, with farm households, markets, and rural communities continually adapting to agricultural policy reform and changing market conditions. Because each segment of the farm and rural community faces unique conditions, ERS economists are engaged in a broad-ranging set of studies focusing on the diverse responses of countries, regions, commodity sectors, and farm households to fundamental policy adjustments. Research is intended to inform decisionmakers about the broader impacts of policy reform, and offer insights on developing mechanisms to facilitate adjustment among groups affected by policy change. Research in this area is available in a new Briefing Room on the ERS website, "Farm Policy, Farm Households, and the Rural Economy" (www.ers.usda.gov/briefing/adjustments/). **Erik Dohlman**, edohlman@ers.usda.gov, and **Carolyn Dimitri**, cdimitri@ers.usda.gov

New Releases

China Commodity Markets

China is contributing to a tighter world market in wheat, corn, and soybeans. China has cut back on corn and wheat exports and appears poised to increase wheat imports. China has emerged as the world's largest soybean importer, and its huge appetite for soybeans is contributing to soaring world prices and tight supplies. Two recently released reports—*China's Wheat Economy: Current Trends and Prospects for Imports* (www.ers.usda.gov/publications/whs/may04/whs04d01/) and *Is China's Corn Market at a Turning Point?* (www.ers.usda.gov/publications/fds/may04/fds04d01/)—provide up-to-date information on policy, trade, supply and demand trends. A third report on soybeans is forthcoming. **Fred Gale**, fgale@ers.usda.gov

Fred Gale, fgale@ers.usda.gov

How Rural Areas Differ: The New ERS County Typology

ERS recently released a new county classification that captures the broad economic and social diversity among rural areas. Earlier ERS typologies have been widely used by policy analysts and public officials to determine eligibility for and effectiveness of Federal programs to assist rural America. The new county typology

identifies six discrete economic types of nonmetro counties based on the primary economic activity of the county—farming, manufacturing, mining, service, Federal/State government, and other. The typology also identifies seven county types that distinguish important policy themes, including persistent poverty, persistent population loss, housing stress, retirement destination, recreation, low education, and low employment. Also, for the first time, this classification identifies both metropolitan and nonmetropolitan counties by county type. See www.ers.usda.gov/briefing/rurality/typology/ for more information on the new ERS County Typology. **Linda Ghelfi**, lghelfi@ers.usda.gov



Recent Meetings

Assessing the Measurement of Food Consumption

In May 2004, at the request of ERS, the Committee on National Statistics of the National Research Council held a workshop designed to assess the status of the data infrastructure underpinning USDA's numerous food consumption-related responsibilities. Experts from academia, USDA, and other Federal agencies discussed food consumption data needs in order to evaluate the outcomes of food and nutrition programs, assess food safety regulatory proposals, and understand consumer demand for food and agricultural commodities. USDA's current data collection activities are heavily weighted toward understanding agricultural production rather than food consumption. **Nicole Ballenger, nicole@ers.usda.gov**

Integration of North American Agriculture

In May 2004, ERS co-sponsored a workshop in Cancún, Mexico about the integration of North American agriculture. The workshop was conducted by the North American Agri-Food Market Integration Consortium, which includes representatives from government, academia, and the private sectors of Canada, Mexico, and the United States. ERS economists Thomas Vollrath, Steven Zahniser, and Chris Bolling collaborated with Darcie Doan and Andrew Goldstein of Agriculture and Agri-Food Canada on a background paper for the workshop. Other topics at the workshop included lessons from the European Union, policy issues concerning bovine spongiform encephalopathy ("mad cow disease"), and the impact of integration on rural Mexico. For more details, see <http://naamic.tamu.edu/>. **Steven Zahniser, zahniser@ers.usda.gov**

The citations here and in the rest of this edition are just a sample of the latest releases from ERS. For a complete list of all new ERS releases, view the calendar on the ERS website: www.ers.usda.gov/calendar/



Agricultural Risks in a Water-Short World

In May 2004, ERS and the Farm Foundation co-sponsored a workshop with financial support from USDA's Risk Management Agency (RMA) on "Agricultural Risks in a Water-Short World: Producer Adaptation and Policy Directions." The workshop focused on measuring the costs of, and exploring mitigation options for, unanticipated water supply interruptions, and provided a forum for research supported by RMA, ERS, and others. Presenters from academia, Federal and State agencies, and stakeholder organizations discussed the current Federal role in mitigation of agricultural risk from water shortages, the agricultural costs of restricted water supplies, the role of institutions in allocating water and water-related risk, and the use of water markets as a risk-mitigation strategy for irrigated agriculture. Abstracts of the presentations are available at: www.ers.usda.gov/briefing/wateruse/wkshopagenda.htm. **Noel Gollehon, gollehon@ers.usda.gov**

Research Presentations on Ag Biotech Topics

In April 2004, at the University of Illinois, ERS researcher Paul Heisey delivered a paper (prepared with John King) on "Public Provision of Knowledge for Policy Research: The Agricultural Biotechnology Intellectual Property Database." The conference, entitled "Seeds of Change: Intellectual Property Protection for Agricultural Biotechnology," convened experts from different disciplines and professional backgrounds to address the key legal, economic, and public policy issues regarding intellectual property rights in agricultural biotechnology. Jorge

Fernandez-Cornejo presented his research on "The Adoption of Biotech Crops: Extent of Adoption and Impacts" at a workshop to educate personnel in the U.S. Department of the Interior's National Park Service (NPS) on issues related to genetically engineered (GE) crops. A goal of the workshop was to begin developing a consensus on the major elements of a GE policy for NPS. **Paul Heisey, pheisey@ers.usda.gov, and Jorge Fernandez-Cornejo, jorgef@ers.usda.gov**

Annual Meeting of Geographers

In March 2004, ERS researchers participated in the American Association of Geographers (AAG) annual meeting in Philadelphia, PA. AAG, founded in 1904, includes 8,400 regional economists, geographers, and demographers. William Kandel presented a paper documenting how Hispanic population growth and changing demographic characteristics in rural areas are leading to new demands for public services, such as schooling, health care, and housing. John Cromartie and William Kandel reported that over 1.2 million Hispanics live in census-defined rural areas within metropolitan counties and discussed how changes in this population have affected their spatial concentration, social and economic well-being, employment, and integration into the community. Dennis Brown presented research findings on the economic and policy implications of rapid population growth in non-metro recreation counties defined by ERS. As part of AAG's centennial celebration, Calvin Beale discussed the landmark contributions in the 1930s of O.E. Baker, a geographic demographer with USDA's Bureau of Agricultural Economics, the predecessor of ERS.

County Typology Team

How can policymakers help attract residents to rural areas that have rapidly declining populations? What is the relationship between high poverty rates and population density or proximity to urban areas? Is the workforce in some remote rural areas less educated because teens are dropping out of school or because the more highly educated are leaving for better opportunities elsewhere? The analytical foundation for answering these questions is the ERS County Typology (www.ers.usda.gov/publications/briefing/rurality/typology/).

Led by Linda Ghelfi, the County Typology Team unites experts from several social science backgrounds—economics, sociology, demography, geography—to design a classification scheme that is adaptable to a wide variety of analyses. The typology includes such indicators as population size and nearness to metro centers, dominant industry, and whether a county is persistently poor or a retirement destination. The synthesis and study of all these traits helps policymakers tailor rural development programs and initiatives so that the right funds go to the right places. For example, the typology will be useful in the administration of the new Department of Health and Human Services Frontier Communities Program authorized in the last Congress to provide health assistance to needy rural areas.

The team recently redesigned the typology to better reflect current conditions. Updated with data from the 2000 Census and new industry data from the Bureau of Economic Analysis, the typology also reflects the new metropolitan, micropolitan, and noncore county definitions developed by the Office of Management and Budget in June 2003.

"Times change as technology improves and preferences morph" says Ghelfi. "I like to think of our new typology as keeping pace with shifting rural conditions, with continued emphasis on traits that may merit public intervention."



County Typology Team Members: (l to r) Robert Gibbs, Timothy Parker, Dean Jolliffe, Calvin Beale, Richard Reeder, Linda Ghelfi, William Kandel, David McGranahan, James Mikesell, and John Cromartie.